AVICULTURAL MAGAZINE

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THE AVICULTURAL SOCIETY

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THE AVICULTURAL MAGAZINE

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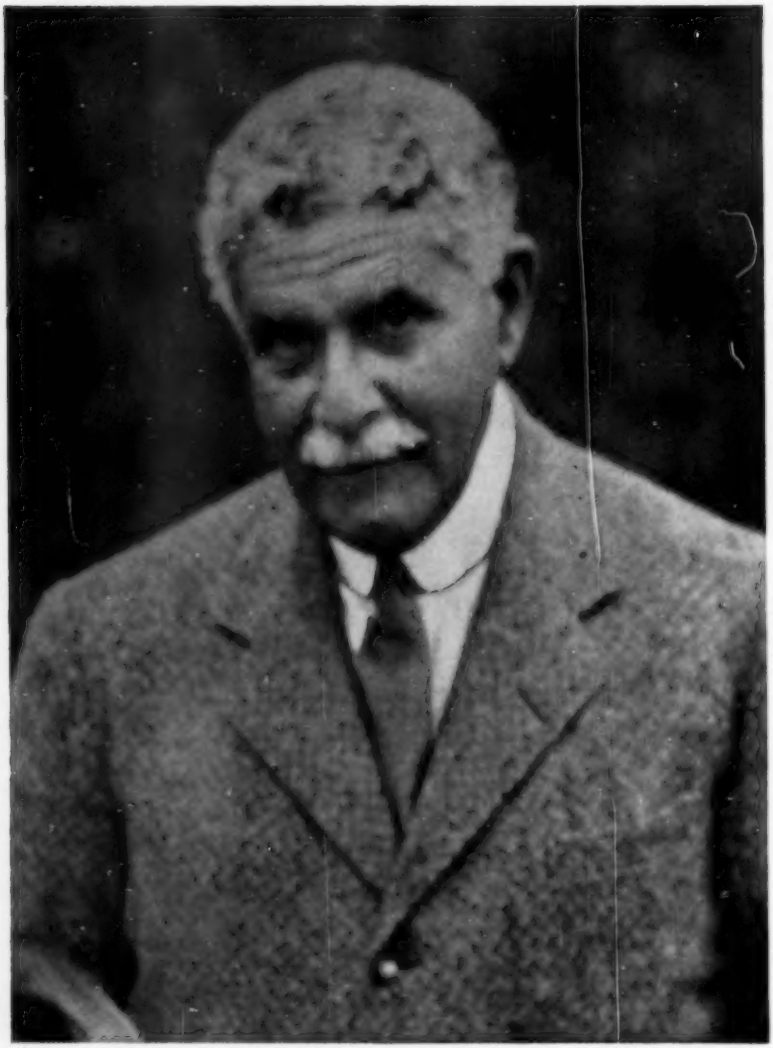

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Alfred Ezra, O.B.E.

President of the Avicultural Society, 1926–1955.

Frontispiece]

AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY
AND THE AVICULTURAL SOCIETY OF AMERICA

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IN MEMORIAM

ALFRED EZRA, O.B.E.

To most of the members of the Avicultural Society the news of the death of our President which occurred on 1st August, has come as a great shock, and to the many who knew him well as the realization of the loss of a dear friend.

Alfred Ezra was the son of Elias David Ezra, a prominent Jewish merchant in Calcutta, his brother the late Sir David Ezra, several times Mayor of Calcutta, being a frequent visitor to this country and also a great aviculturist. Alfred took up his residence in England after some extensive travelling in the Pamirs and Turkestan where he collected many fine hunting trophies and became very interested in the birds he encountered. Although he had a London house he always preferred the country so, in 1919, he acquired the 300 acre estate of Foxwarren Park, Cobham, Surrey, in which he was able to indulge his ambition of keeping rare foreign birds and mammals under ideal conditions. Strangely enough, a former owner had at one time kept cockatoos and other parrots at liberty there.

Ranges of large aviaries were erected for the smaller birds as well as for parrakeets, on a site ideal for the purpose where there was plenty of sunshine, but protection from winds, while enclosures were made for cranes and strong fences erected to enclose large areas for deer, antelopes and wallabies. A stream running through the park was enlarged in places to form ponds for ducks, and these proved so successful that a number of the rarer species were kept successfully and many bred. Geese of the rarer kinds enjoyed a large range in the park.

The collection grew rapidly, the aviaries becoming well stocked with some of the greatest rarities such as, for instance, Renauld's Ground Cuckoos, several kinds of plovers, Sun Bitterns, South African Bee-eaters, Crowned Pigeons, and so on. And he had many successes in breeding species never before bred in captivity.

Many of us remember the fine range of aviaries for parrakeets where one could see Queen Alexandras, Green-winged Kings, lutino

Ringnecks and blue Alexandrines, besides many others. A fine imported male of the last mentioned, mated to a normal female, produced young from which a second blue male was eventually bred, though these were slow breeders compared with the Ringnecks which produced a whole flock of lutinos.

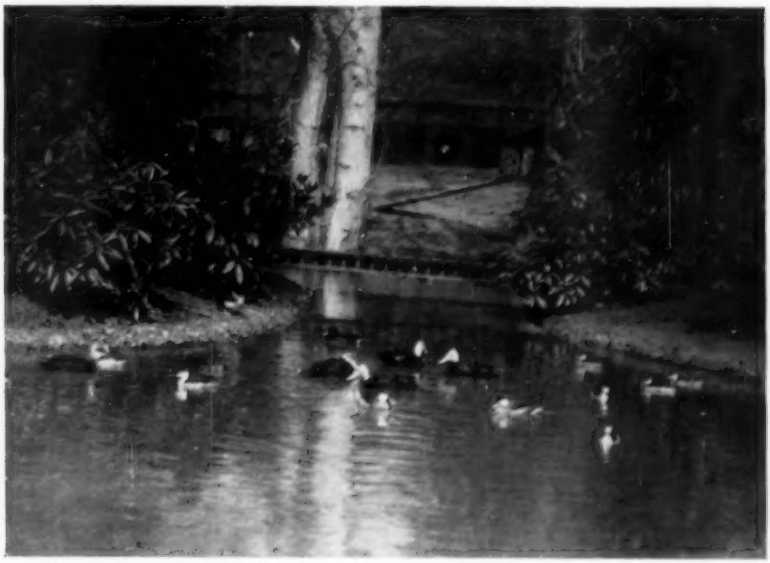
Of mammals there was a large herd of Axis Deer which, with Chinese Water Deer and Muntjac, thrived in a space of several acres. Blackbuck too increased in a most satisfactory manner as did Bennett's and Dama Wallabies, which enjoyed a large range nearer to the house. Unfortunately the deer and most of the antelopes had to go when wartime conditions necessitated the taking over of their enclosure for food production. The larger kangaroos were tried at first, but did not thrive for long, though a particularly tame Red Kangaroo which was known as "Jemima" was a particularly nice pet for many months. Llamas did well and became very tame and great pets with the children.

Mr. Ezra liked to see his birds at full liberty where this was practicable, and to this end introduced a number of Indian Turtle-doves and Chukor Partridges into his garden. The doves nested freely in the trees, but with the fall of the leaves became too visible and easy prey for the owls and hawks which are common in the Surrey woods. Chukors, on the other hand, did well, the conditions of soil and surroundings suiting them admirably, besides which they took to roosting on the roof of the house, no doubt in some sheltered corner, where they were safe from owls and other predators. On any afternoon just before sunset, they might be seen gathering on the lawn and as dusk approached flying up, one by one, to the roof.

Cranes ; Manchurian, White-necked, Stanley and others were kept in the enclosures and young were bred most years, but one pair of Sarus, the largest of them all, was allowed full liberty while others of the same species had the run of the park. The full-winged pair soon began to take flights around and it was a grand sight seeing them on the wing, sometimes flying at a great height. The pinioned birds in the park would commence trumpeting loudly, being answered by those in the sky which would suddenly appear out of the blue and make a perfect landing amongst those on the ground. They were fond of wandering amongst the reeds and rushes on the banks of the river Wey, but they apparently occasionally visited gardens and allotments in the neighbourhood whose owners complained, with the result that, as they refused to be caught, Mr. Ezra, very reluctantly, had to give orders that they were to be shot. A flock of Demoiselle Cranes had the run of the garden and lawns, being shepherded into a fox-proof enclosure every evening.

Amongst the waterfowl were many rare species of ducks and geese, the rarest of all being the Pink-headed Duck of which, in 1932, there

Sarus Crane in flight. Foxwarren Park, 1933.



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One of the Duck Enclosures. Foxwarren Park, 1932.

To face p. 216.

Orinoco and Andean Geese. Foxwarren Park, 1933.

Copyright] [*D. Steh Smith*

Pink-headed Duck *Rhodonessa caryophyllacea*. Foxwarren Park, 1932.

To face p. 217.

were several males, but only one female. " Chips," as he was affectionately known to his friends, had obtained these through his brother in Calcutta. They had been brought in by a dealer who did not seem to know from where they had come. Stuart Baker, in his *Indian Ducks and Their Allies*, published in 1908, gives a beautiful coloured plate of the bird, while another appeared in our Magazine for June, 1932. In Stuart Baker's time it was not a particularly rare bird whereas now, from all accounts, it is so scarce that it is feared to be nearly extinct.

The small ponds, surrounded by trees, have suited the Mandarins extremely well. Nesting-barrels and boxes, fastened up in the trees, provide ideal nesting-sites for these hole-breeding ducks, the ducklings on hatching, falling to the ground quite unhurt by their tumble. So this most striking little duck has become quite established there, the young always being allowed their full powers of flight, and it has spread to other parts such as Virginia Water and other suitable spots.

Alfred Ezra became a Fellow of the Zoological Society in 1909, soon after which he was elected a member of its Council, on which he has served for long periods to the present time. He was a most generous contributor to the Zoo collection, making many very valuable gifts including elephants, tigers, and other Asiatic animals, as well as a pair of the huge and rare Kodiac bears which are domiciled at Whipsnade, where they have bred. He has been a very keen and valued member of the Avicultural Society since 1912, when both he and his brother David joined, and he was elected as its President on the death of the late Hubert Astley in 1926. He never failed to preside at Council Meetings unless prevented by ill health, and Members will always remember those delightful Garden Parties given at Foxwarren by Mr. and Mrs. Ezra, which had become an annual event very much appreciated.

For many months past Mr. Ezra had suffered from osteo-arthritis, probably due to an old accident while playing polo. The pain had lately become very severe, though he bravely attended meetings in London when he thought it his duty to do so.

On one of the last days in July I called at Foxwarren to inquire how he was and was invited to go up to see him in his bedroom. As I entered he received me with his usual bright smile and friendly greeting, and as I sat at his bedside in that cheerful room with pictures of the rare birds he had kept all around, and a large stack of cages near the window containing living jewels such as Humming Birds, Sunbirds, Shamas and Tanagers, we talked about old friends and about his birds. I remarked upon the excellent condition of the Humming Birds and how successful he had been with them. " Yes," he said, " they are some of the easiest birds to keep. I have had the larger of those for seven years." I had been asked not to stay very long as it might tire him, so took my leave as he said " Good-bye,

come again soon". Four days later he passed to his rest. I had known him intimately for over forty years.

To Mrs. Ezra and her two daughters our members will wish to convey their sincere sympathy.

DAVID SETH-SMITH.

* * *

Nearly forty years ago, during the first world war, I met Alfred Ezra for the first time, through my old friend, the late Hubert Astley. We had been corresponding for some years, of course. Ezra was a pioneer in keeping nectar-feeding birds, and he had invented the formula, still in use to-day, of a mixture of honey, milk, and Mellin's food, to keep alive the lovely Sunbirds of India and, later on, those of Africa, as well as American Humming Birds. The late Marquis de Ségur, who kept in Paris a splendid collection of Humming Birds and Sunbirds and had let me have some in 1913–14, had then put me in touch with Ezra. Having the same tastes and interests we very soon became close friends, and this friendship grew up and became closer through the years.

Between the two wars I used to spend a week or two in England each month, when I was not travelling far from Europe. Most of my time in England was spent with Ezra, and his houses in London and at Foxwarren were almost as much home for me as was Clères, where he also often stayed. Together we used to visit friends and to see bird collections all over England and France. We went to bird-shows, we attended the meetings of zoological and ornithological clubs and societies, year after year. We sat together on the Council of the London Zoo. We practically owned in common our animals and birds, as we shared in the same collecting expeditions and we were constantly giving each other specimens we obtained or reared. Ezra's generosity and unselfishness were proverbial and I certainly have benefited from them more than anybody else. We thus had twenty years of delightful friendship and close association, including a marvellous trip to India in 1933–34. His elder brother, Sir David Ezra, then kept in his Calcutta house and garden an astonishing number of animals and birds, many of which, every year, found their way to Foxwarren and to Clères. A large part of the birds which I brought over from Indochina also went to Foxwarren. In those happy days both our collections were incredibly rich and interesting, full of rare species we had almost never dreamt to possess. Excellent collectors such as Messrs. Webb, Cordier, Frost, and Shaw-Mayer were constantly bringing us great rarities from all parts of the earth, many imported for the first time, and it is probable that never again will aviculture reach such a high level.

But the best things in this world come to an end. The 1939–1944 war entirely destroyed my collection in France, while that of Ezra had to be curtailed to a depressing degree. He, however, kept a number of birds and animals ; whatever he could feed. Even after the war his collection never approached its past standard. Age and illness, as well as other difficulties, had become an overwhelming handicap, but there are still a number of interesting specimens at Foxwarren to-day.

Until last year, the annual garden party he gave the Avicultural Society at Foxwarren was the highlight of the activities of its members. The generous hospitality of Mr. and Mrs. Ezra has been well known not only in England, but throughout the world. Many foreigners, particularly American and French aviculturists, were welcomed repeatedly in a way they will never forget.

With the passing away of Alfred Ezra, a happy, prosperous, and delightful era has gone. I probably will miss him more than anyone else, as he was my best friend. But my sorrow is shared by many others, not only in England, but in France, in the United States, and all over the world.

JEAN DELACOUR.

* * *

When I learned from the July–August number of the AVICULTURAL MAGAZINE of the death of Mr. Alfred Ezra, President of the Avicultural Society, I was both sadly surprised and profoundly grieved.

Surprised, because though I had known for some time that his health was in a precarious state, all the more serious because of his advanced age, I held this great authority on ornithology and aviculture in such high esteem and admiration that I had come to regard him as having acquired a halo of immortality.

Profoundly grieved, because the death of someone of such noble character, endowed with great qualities of heart and mind, a great willingness to help, charming courtesy and a wide knowledge generously placed at the disposal of all, means for every ornithologist, for every aviculturist, the loss of an experienced counsellor who was also a good friend.

For all those who, throughout the world, are interested in breeding and rearing birds in captivity, the name of Alfred Ezra is, and will remain, as a symbol of what I should like to term " ornithological humanism ", in the most noble sense of the word.

His memory will for ever remain in the hearts of those who, in varying degrees, share his ideals.

WALTER VAN DEN BERGH.
Société Royale de Zoologie d'Anvers,
Belgium.

After reading in the AVICULTURAL MAGAZINE about the death of Mr. Alfred Ezra, we have the honour to present our sincerest condolences on the loss of the Society's noble and much beloved President.

We ourselves will keep the kindest remembrances of this dear and most hospitable gentleman.

F. SIEWERTSZ VAN REESEMA.
IR. F. J. APPELMAN.
Diergaarde Blij-dorp,
Rotterdam, Holland.

* * *

A year ago, when representing the journal *Die Gefierderte Welt*, and thereby as spokesman of the majority of German aviculturists, I was able to attend the Diamond Jubilee of the Avicultural Society in London, it was a special pleasure to me to be introduced to Mr. Ezra, whose numerous important articles on aviculture had been known to me for a long time. Above all I remember his articles, ranging over thirty years, in which he clearly and concisely described, with expert knowledge, so many first breeding successes and valuable observations made in Foxwarren Park, and, in addition, accounts of his travels. This information was a substantial contribution to aviculture and thereby to the science of ornithology.

With feelings of sadness I now recall the Garden Party at Foxwarren Park to which Mr. Ezra invited the 150 participants of the Diamond Jubilee, on 19th June, 1954—the wonderful park with the distant view over the rolling southern country—the beautifully situated and richly filled aviaries—the generous hospitality of our host, and the way he took part in everything in spite of his physical difficulties and ill health.

The German aviculturists unite in paying a high tribute to the memory of Mr. Ezra and through me express to the Avicultural Society, with whom they have always felt most cordially linked, their heartfelt condolences.

JOACHIN STEINBACHER.
Editor *Die Gefiederte Welt*,
Frankfurt-am-Main,
Germany.

* * *

I have learnt with the greatest regret of the loss of our President, Alfred Ezra. The distance at which I live and the circumstances of my life have prevented me from being in such close contact with him and appreciating his high qualities and his great interest in aviculture and birds as much as I should have liked. It is about thirty years since I was first in communication with his brother, Sir David Ezra, at the

time Sheriff of Calcutta, when he sent me several interesting species of Indian birds, among which were Black-breasted Francolins, several pairs of Jungle Bush Quail (*Perdicula asiatica*) which have bred in my aviaries, and a female of the rare Malay Peacock Pheasant (*Polyplectron malacense*).

Each time that I have been to London I have had the pleasure of visiting the President of the Avicultural Society at his beautiful estate at Cobham. I remember in 1934 when he invited the members of the VIIth International Ornithological Congress, which was held at Oxford, to visit his collection of birds, we all admired the yellow and blue varieties of the Alexandrine Parrakeet and the Sarus Cranes nesting. The last time that I had the opportunity of visiting him, in 1952, when he was already ill, he courteously accompanied me in his electric chair to look at the Specifer Peafowl, and the Blue Eared Pheasants which he kept at liberty in his park with the Mandarin Ducks which flew about like wild birds. He derived much pleasure from his two flocks of Chukor Partridges which were bred in the park and used to come up to the house for food, just like domestic fowls.

I pay a sad and respectful tribute to his memory, and express my sincere condolences to Mrs. Ezra and his daughters, and also to his niece who acted as a link between her uncle and me by visiting me in Bologna whenever she was travelling on the Continent.

Alessandro Ghigi,
Bologna, Italy.

* * *

BREEDING THE YELLOW-CHEEKED CONURE

(*Aratinga pertinax chrysophrys*)

By A. A. PRESTWICH (Southgate, England)

During May and June, 1952, the trade offered a large number of parrakeets, wrongly described as "St. Thomas's Conures"—in reality the Yellow-cheeked Conure. As far as can be judged this was a subspecies new to aviculture. A description is unnecessary as there is a Reid-Henry coloured plate in the July–August, 1954, number of the Magazine.

We obtained six birds in the hope that there would be at least one pair amongst them. Conures generally seem particularly difficult to sex as the colouring of both sexes is practically identical. I am sure that out of the breeding season it is quite wrong to suppose that because they sit in couples they are necessarily pairs. I have noticed this repeatedly with our Red-faced Lovebirds; two males or two females are perfectly happy together, even when they could, if they wished, find a companion of the opposite sex. So long as they have companionship they do not appear to be particular about its source.

From time to time we were offered these Conures in ones and twos, so that eventually we had no less than fifteen. Evidently this subspecies did not prove a particularly welcome newcomer to the aviaries of Great Britain. And probably with good reason. Our experience is that it is one of the less desirable members of its group, being very noisy, destructive, but boisterous rather than really quarrelsome—although on several occasions we have effected rescues only just in time after a sudden collective onslaught. Conure species appear to be great believers in lynch law.

In 1954 we had two couples in one of our 30 ft. flights and four couples in another. Numerous converted ammunition-boxes, internal measurements 15 inches high, base 9 inches by 6½ inches, containing turf and peat, hung at an angle of about 30° from vertical, hole facing north, were provided. We hoped the couples would resolve themselves into true pairs. The two couples did, in fact, prove to be pairs and nested, producing four and five eggs respectively. They failed to complete incubation; due, I believe, to the fact that both pairs regarded both nest-boxes as joint property and entered them indiscriminately.

The eight birds in the second aviary made no attempt to nest, nor did they evince any interest whatever in the nest-boxes. During the winter two of the eight died as the result of frozen feet and a third sustained a broken neck, possibly through a night fright. Thus hopes for 1955 were centred on two pairs in one aviary and five birds in the second.

Towards the middle of June one of the two proved hens appeared to be taking more than usual interest in one of the boxes, and it soon became evident that she really intended to nest. The first egg was laid on the 16th June, followed by four more on successive days: sitting commenced with the second egg. We believe the first hatched on 12th July, an incubation period of 25–26 days, and a second the next day; the remaining eggs had dried up.

The first young one, a fine, strong flyer, an exact replica of its parents, but a trifle less brightly coloured, left the nest on 30th August—nearly eleven weeks after the laying of the first egg. The second, a poor flyer with a marked shortage of feathers on its back, left the nest the next day, possibly somewhat prematurely.

We were very surprised this nesting attempt reached such a successful conclusion as the whole episode coincided with the three months of heatwave and drought. The hen was very restless while incubating; she never appeared to be taking her duties seriously and in the daytime spent frequent periods looking out of the nest-hole. Later, during the intensely hot weather she sat and literally gasped. How the young ones survived in what must have been an inferno is little short of miraculous.

During the day the male spent most of the time warding off the intrusions of the second pair, and this he succeeded in doing with nothing worse than the loss of an occasional feather on one side or the other. At night he retired into the nest-box. When they first emerged the young ones were treated with a deal of hostility by the non-breeding pair, but their parents always had the situation well in hand, and within a day or so they were accepted.

The parents were not provided with any extras and only had their routine foods—seed mixture, soaked millet sprays and almost unlimited soft, sweet apple. Green food as available—chickweed, groundsel, sow thistle, spinach, etc.—was, as usual, supplied, but they did little more than just pick it over.

The five in the other aviary have spent much time in the various nest-boxes, but so far without result.

As described above, A. A. Prestwich has bred the Yellow-cheeked Conure (*Aratinga pertinax chrysophrys*). It is believed that this may be a first success.

Any member or reader knowing of a previous breeding of this subspecies in Great Britain or Northern Ireland is requested to communicate at once with the Hon. Secretary.

* * *

BREEDING OF THE OREGON TOWHEE

(*Pipilo maculatus oregonus*)

By C. M. Payne (Barford, Warwick, England)

During the Autumn of 1953 a friend in Canada sent me two pairs of Oregon Towhees (*Pipilo maculatus oregonus*) which arrived in beautiful condition. They were quite tame and confiding and quickly settled down to life in one of my aviaries. A description may not come amiss, particularly as the birds, although not unknown, are somewhat rare in this country.

Male.—Jet black above, including head, neck, and upper breast, cutting sharply across chest against pure white underparts. A broad bar of reddish-brown or bay along flanks. Wing-coverts and outer scapulars conspicuously spotted with white.

Female.—Similar, but the black greyish.

The birds are found in western North America. In Canada from south-eastern Manitoba and south Saskatchewan westward through southern British Columbia to the coast. It is a resident on the coast and migrant elsewhere.

The Towhees are very easy to feed, softbill mixture and seeds as given in a mixed collection suits them admirably.

During 1954 I could not spare a separate aviary for the Towhees and they had to share one with a pair of Nanday Conures which that year reared two young, also quite an unusual breeding success. Unfortunately, although the Towhees did not interfere with the Conures, the same cannot be said of the Conures, although they allowed the Towhees to build a nest and lay three eggs which appeared fertile, they one day upset the nest and broke the eggs ; I don't think out of spite, but rather from an inquisitive turn of mind.

During the early part of 1955 I moved my home and so had to construct new aviaries, and although I have in fact built quite a few, I still haven't enough—a common complaint. So the Towhees once again had to share, this time with Ring Ouzels, American Robins, Golden-crowned Sparrows, a Varied Thrush, and perhaps strangest of all, three pairs of Fischer's Lovebirds.

During early May my aviary attendant told me he had seen the hen Towhee carrying dried grasses about the aviary—these are the reports which I await eagerly each year—the first sight of a bird carrying nesting material about the aviary raises one's hopes, often to be dashed to the ground later on. I watched and saw the hen carrying some bents to a corner of the flight and on inspection I saw the first stages of a nest under construction. It was built directly on the floor and it may be noted that in 1954 the birds built about 18 inches from the ground in a clump of gorse. Both nests were built of grasses and bents with no lining, reminding one very much of

the nest of the Yellow Hammer, in fact, the birds appear to have quite a lot in common with Yellow Hammers—the same skulking among the lower bushes and brambles, and occasionally being seen on a dead branch, or other conspicuous perch. During the courtship the cock Towhee spreads his tail and shows more clearly the white band at the end. At the same time he puffs out his side feathers and shows off his beautiful spots. No mating was witnessed. Three eggs were laid at daily intervals and in due course, about fourteen days after incubation seriously began, there appeared one small Towhee which although light in skin was covered in blackish down. The difficulty then began; how to feed live food without all the other inmates devouring the gentles before the placid Towhees could get enough for their baby. I took the risk of putting a tin of gentles quite near the nest, hoping the Towhees would gain confidence and keep off the others and, within limits, the arrangement worked. The Towhees helped themselves for the youngster, and then the other birds, particularly the Varied Thrush, gorged on the remainder. After a few days my man began to throw a few gentles near the nest every time he passed the aviary—it can be said that the bird was reared entirely on gentles with a few earth-worms as an appetizer. The baby left the nest when fourteen days old and was self-supporting at one month; however, whether due to the type of food given during the early stages, or inherent in the birds, the chick's feet were imperfect in that the back claw was pushed forward and accordingly the youngster, although otherwise perfectly healthy, cannot perch properly.

There is really a second part to this breeding success. After this youngster left the nest the parents immediately set about preparing for another family. The original nest was repaired where necessary and in due course four eggs were laid; after fourteen days' incubation three young Towhees appeared. As the method of feeding had been successful when applied to the previous rearing we again placed a pot of gentles near the nest so that the Towhees could have the first helping. The young birds grew apace and indeed left the nest after twelve days. By this time they had tails about half an inch long, but were unable to fly any distance. However, this did not prove a handicap because the old birds found them out, wherever they had managed to land and gain a foothold, and simply filled them with gentles. These three babies, like their elder brother, which I now know him to be as he is already in the moult and the beautiful red sides with its attendant white spots are increasing in area daily, look like very dull baby Blackbirds; they have the same mottled breast, their overall colour being the same.

At the time of writing one youngster has passed on, having been found with a serious head wound, no doubt caused by one of the other inmates of the aviary. The remaining two are nearly self-

supporting, have quite long tails, and can get about the aviary without the slightest trouble. They are very confiding and I am thankful to say have no deformities like their elder brother.

Generally I find the birds most attractive, very placid, easy to feed, mix extremely well, and indeed appear to have no faults in a mixed aviary—something which cannot be said of many species.

As described above, C. M. Payne has bred the Oregon Towhee (*Pipilo maculatus oregonus*). It is believed that this may be a first success.

Any member or reader knowing of a previous breeding of this species in Great Britain or Northern Ireland is requested to communicate at once with the Hon. Secretary.

* * *

BREEDING THE CITRON-CRESTED COCKATOO

(*Kakatoe sulphurea citrino-cristata*)

By S. Brian Kendall (Chertsey, Surrey, England)

The Citron-crested Cockatoo has always been a rare bird in captivity, presumably as a result of its limited distribution (Sumba Island), but during the temporary lifting of the ban on the importation of parrots in 1952–1953 a number reached this country. There are at present several odd males in different hands, but the hens are unfortunately very few.

I bought my pair of birds separately in the early part of 1953, and like Boosey (1953, 20) was very impressed by their extremely lovely colour combination of orange, palest lemon-yellow, and snow-white. In addition to their beautiful coloration they are also very attractive in shape, being about intermediate in size between the Dwarf Sulphur-crest (*K. parvula*) and the big Australian *K. galerita*, but without the rather " over-beaked " appearance of the Dwarf. Adults are readily sexed by the eye-colour, which is nearly black in the male and red-brown in the female. In addition, the male is typically slightly larger, has a considerably more massive bill and head, a markedly more richly coloured crest and, in the examples I have seen, more yellow on the breast and abdomen. Immatures probably always have dark eyes, but can be sexed by the more massive head and bill. There is as yet no information as to when the eye of the hen becomes red.

When first received my male was wing-clipped and wild. After a time he became steady, but has always remained truculent and I do not think he would ever have become really tame. By contrast the hen, which arrived with a small leg-ring and chain, was a delightfully tame and very lovable bird and it was a great temptation to keep

her so. Very soon after being introduced to the male, however, she lost all interest in her human friends and has remained as standoffish as her mate ever since.

From the beginning both birds displayed a great deal, the performance being most elaborate after a temporary separation or when danger was apprehended. The male usually commenced by hopping movements towards the female, raising and lowering the wings, the male often covering the female with his wings. This was followed by a complicated bowing and head to tail display combined with beak clicking. Mutual preening was never seen. Preening of any description does not seem to be associated with sexual display.

During the summer of 1953, soon after they arrived, the pair took some interest both in a grandfather clock and in a grape-barrel nest-box, but nothing materialized. During the winter of 1953–54 they remained in an open wire flight with an open fronted shelter. My impression is that they are exceedingly hardy. In 1954 nesting barrels were again cleaned out, starting at the end of March and continuing until June or July. In August of 1954 the birds had a moult which replaced all the clipped feathers, and they really began to look like the lovely things they are.

In 1955 nest-boxes were put into the 35 ft. flight in the first week of April : a grandfather clock facing north and a 15 gallon barrel, on end, facing south. By 9th April the male was in the barrel, the pair was seen copulating on 25th April, and during the week ending 14th May both birds were in the barrel a good deal, sometimes together. About this time there was a suggestion of the development of an egg-pouch and after a day or so the hen looked definitely pregnant. On the night of 18th May the hen remained in the barrel. I believe this was the date of the first egg, and thereafter incubation was evidently occurring. The hen seemed to do most of the serious sitting, although the cock spent a good deal of the day in the barrel, coming out, however, if anything interested him, and roosting out at night. Food was occasionally taken into the box, and once or twice green leaves, possibly for nest lining. On 16th June young were heard, indicating an incubation period of about 28 days. Both parents were in the box for the first time, on the night of the 18th, a routine which was continued until the young fledged. Particularly in the early days of rearing the young were very noisy ; a rapid " Eek-eek-eek " presumably being the feeding note. In addition, there were low grumbles and querulous whines.

The Citron-crests proved model parents, the young being very rarely left by both parents even for the shortest period of time, and even if the barrel had been accessible I do not think it would have been possible to record progress without gross disturbance. I did in fact manage to contain my interest until 28th July, when I was

able to look, with the aid of an electric torch, through the wires of the aviary and into the nest hole. One young bird was fully feathered and with a well developed orange crest. The parent in the barrel appeared to be covering something else. On 3rd August I was able to confirm that a second, considerably less mature young bird, was alive.

The young were reported by members of my family to have commenced appearing at the nest hole from 28th July, but it was rarely possible to obtain more than a fleeting glimpse of a bird in the shadows of the barrel. One young one finally emerged on 22nd August and both were out on the 26th. Within a day or so they were flying strongly and they show every sign of developing into magnificent specimens. Both have dark eyes, but they appear to be a true pair.

On 27th August all the birds roosted out in the open flight and the young have never returned to the barrel.

Citron-crests are very easy to feed. Mine get a staple diet of mixed chicken-corn which varies somewhat according to the whim of the merchant, but essentially contains wheat, oats, barley, and cracked maize. During the winter they receive sunflower seed two or three times a week. During the breeding season they get unlimited supplies of their usual seeds together with as much sunflower as they want. In the morning they are given hard-boiled egg and bread-crumbs, as supplied to canaries, and at night bread and milk and assorted fruit (usually apple or plums). They are not very fond of green food, which is, however, offered occasionally, but they adore sweet-corn and hawthorn-berries in season. Sometimes I give small quantities of other seeds, such as mixed canary seed, but it is difficult to be sure just what they eat. I do not use cod-liver oil, but give Vitamins A and D in another form during the dark months. I do not use any of the extraordinary " aid " mixtures with which bird-keepers are being bombarded nowadays.

At the time of writing (1st September), the young are still with the parents. They are very strong on the wing, but I doubt if they are feeding themselves. I was able to examine the nesting barrel to-day for the first time and was unable to find any evidence of infertile eggs or dead young, so it appears as if the record should read laid—2, hatched—2, reared—2.

One year's breeding does not, of course, necessarily mean that the species will be easy to establish in aviaries in Britain, but all the evidence suggests that the Citron-crest should thrive at least as well as the Leadbeater's Cockatoo. As the likelihood of further importations seems remote, it is to be hoped that the very few hens which are available will be used to the best advantage.

REFERENCE

Boosey, E. J., 1953, *A.M.* 59 (1), 20.

As described above, S. B. Kendall has bred the Citron-crested Cockatoo (*Kakatoe sulphurea citrino-cristata*). It is believed that this may be a first success.

Any member or reader knowing of a previous breeding of this species in Great Britain or Northern Ireland is requested to communicate at once with the Hon. Secretary.

* * *

THE FIRST BREEDING IN CONFINEMENT OF THE BORNEO, OR BLACK, MANNIKIN (*UROLONCHA FUSCANS*)

By WALTHER LANGBERG (Copenhagen, Denmark)

The Black Mannikin (*Uroloncha fuscans*) from Borneo is very rarely imported. Owing to its very sombre colour the bird would hardly gain a great popularity among aviculturists. Colour description: Entirely uniform blackish chocolate, somewhat obscurely mottled with browner centres to the feathers, quills and tail feathers black, iris brown. Total length 4·2 inches, culmen 0·45, wing 1·9, tail 1·45, tarsus 0·5.

In December, 1939, I obtained five birds of this species from Mr. C. af Enehjelm, then living in Copenhagen. Early in 1939 Mr. W. R. Partridge, of Southmore Foreign Bird Farm, had imported a small consignment, and all were—as far as I know—secured by Mr. Enehjelm. When joining the Forces in Finland in December, he parted with his entire collection and, among other birds, I got the Black Mannikins.

The birds, which were all ringed with coloured rings, were put in a large cage for observation and sexing, and, after some time, they turned out to be three cocks and two hens. One pair was put in a box cage 30 inches long, with a basket nest. The result was, however, very annoying, as the hen was chased by the cock so persistently that I had to take her out of the cage, and later she died. The cock was then mated to a hen Striated Mannikin and a young hybrid, somewhat lighter in colour than the Borneo Mannikin, was bred.

In January, 1940, I put the other pair in an indoor flight, approximately 8 feet long, 5 feet high, and 3½ feet wide, with a window facing south. No other birds were in the flight, which was provided with large willow branches with leaves on, one Harzer wicker cage, and three basket nests. One of the last-named, placed at a height of some 7 feet and with the open side facing the window, took their fancy and a nest of coco-nut fibres and fine hay was built in a few days.

I cannot give the exact dates of laying and sitting, as I did not

enter the flight, in order not to disturb the birds. At the beginning of March, I heard a sound resembling that of young Bengalese being fed. The sound became stronger day by day and I was sure there were several young ones in the nest. On 17th March four fully feathered youngsters left the nest. They resembled the parents, except that the bill was entirely black. Already, after three to four days, the youngsters started to feed and, after a fortnight, they were independent. In the course of about a month the white rims of the bill disappeared and the lower mandible got the light-grey colour of the adult birds. Later on several youngsters were bred by the parents, and eggs were also given to Bengalese, which brought up several more.

The birds were fed on white and Indian millet, canary seed, and condition seed. A soft food, consisting of hard-boiled egg and biscuit and sprouted millet and canary seed, was also given regularly.

* * *

FIRST BREEDING OF THE COMMON MOTMOT (*MOMOTUS MOMOTA*) IN CAPTIVITY

By Roland W. Hawkins (Pittsburgh, Pa., U.S.A.)

Since the opening of the new Conservatory-Aviary in Pittsburgh on 10th August, 1952, bird-nesting activities have been numerous, with young broods being successfully raised by several species. The number of breeding successes has been severely curbed by the problem of not having enough females for the predominantly male population. This situation is being corrected at an exasperatingly slow pace, due to the poor supply of female birds on the market. Among the species that have reared young successfully are: *Rhamphocelus carbo*, Maroon Tanager; *Molpastes cafer*, Red-vented Bulbul; *Copsychus malabaricus*, Shama Thrush; *Turdus migratorius*, Eastern Robin; *Richmondena cardinalis*, Eastern Cardinal; and *Momotus momota*, Motmot. Many of the unmated species have built nests, a good indication that, when the aviary population is properly paired, our breeding results will show a graphic rise. Other species which are nesting at this time are: *Priotelus temnurus*, Cuban Trogon; *Dinemellia dinemelli*, Dinemellis's Weaver; and *Garrulax leucolophus*, White-crested Jay-Thrush.

For the present, we are most excited with the breeding success of our Motmots. Both the male and female belong to the *Momotus momota* group, but are distinctly subspecies. This gives us a hybrid mating between two geographical races. It is most unfortunate that we have no reliable information concerning their place of origin, as this would enable us to make accurate subspecific determination.

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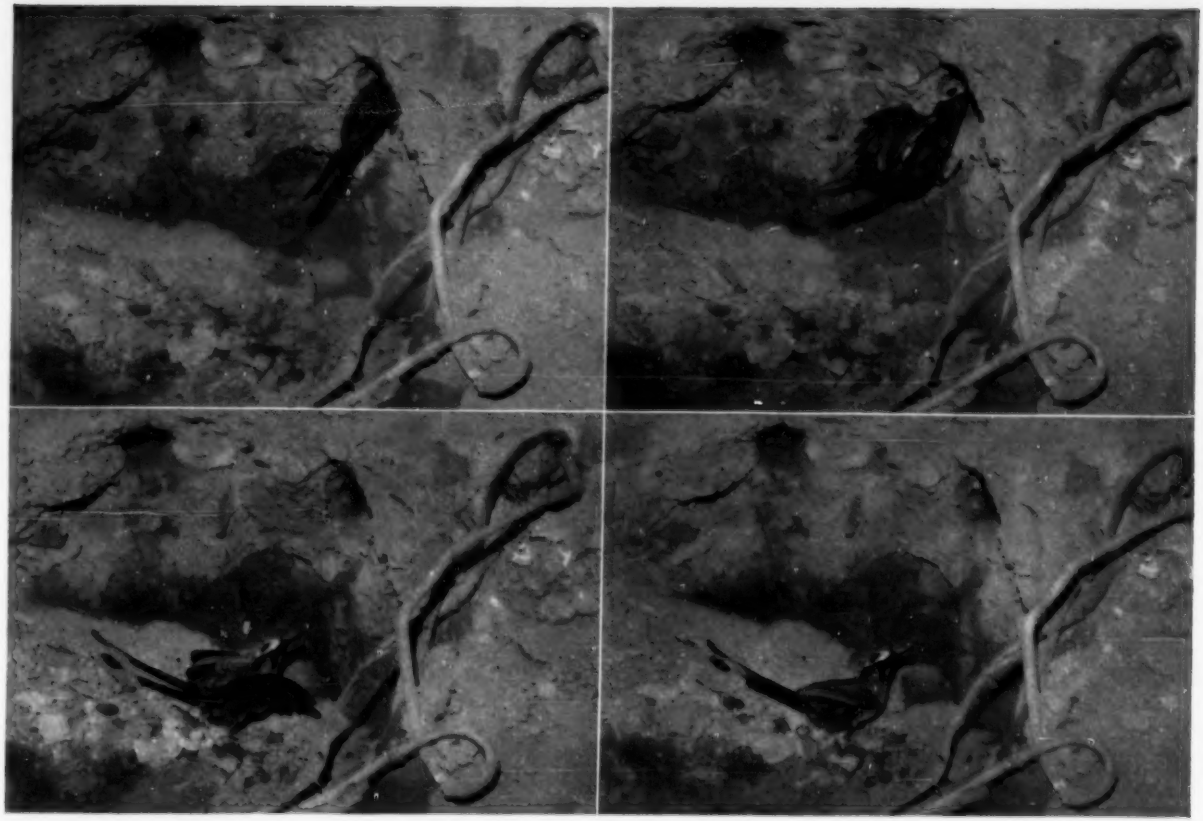
NESTING BURROW UNDER BRIDGE.

To face p. 230.



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ADULT MALE EMERGING FROM NEST HOLE IN FOUR STEPS.

To face p. 231.

As a matter of general interest, the male is several inches larger and much darker coloured than the female.

Mating and Courtship

The first indications of mating was observed on 1st February, when the male bird was released into the room containing two females. Within minutes the two females began vying for the attentions of the larger male; first one, then the other, would perch alongside the male, at which time their long tails began twitching rapidly from side to side. Their throaty, flute-like notes were clearly audible as conversation ensued between the birds. On 2nd February the male apparently favoured one of the arduous females, for together they attacked with relentless savagery the other female, driving her to seek shelter in areas where the vegetation was thick enough to afford protection. Fearing for her life, I removed the outcast bird and placed her in another room. Before the male was introduced to the room the two females were always friendly, never showing any signs of hostility towards each other. This period of friendship lasted two full years.

With the competition of the other female removed, courtship activities began in earnest. The male became a most attentive suitor showing his affections by carrying various choice food morsels to the female ; among these were mealworms, earthworms, fish, crayfish, roach, and pieces of raw ground meat At times he would approach the female with a leaf or small stick in his bill. These visits were frequent and, when the two birds were perched near each other, a pendant tail-wagging party would take place. While the tails were being switched the low, soft-syllabled, flute-like notes could be heard. At times these notes were barely audible, while at other times they were strong enough to be heard a distance of fifty feet. The main display performance of the male was the deliberate swinging movement of the tail being swung sharply from side to side. These movements of the tail were made for several minutes at a time and at a more rapid rate than is normally apparent.

Nesting

On 7th February the Motmots were observed attempting to tunnel in a bank where the tufa rock face had been removed to make room for a planting change in one corner of the room. Both male and female would take their turns at digging, although the male spent longer periods of time in the excavating work. As this bank was to be re-walled with tufa rock at the completion of the planting, a new nesting site had to be provided. A pit was dug under the bridge which runs through the centre of the room, resulting in a bank 4 feet in depth and 5 feet in width. To encourage the birds to adopt this

new site, I started two holes with the aid of a crowbar, digging them back to a depth of 1 foot. On 10th February, both birds were seen digging in one of the holes. As this provisional bank was shallow, I removed the freshly dug earth at the bottom of the hole each day. The digging was done entirely with the bill and the soil was pushed out between the feet at a most remarkable rate. The excavation work was sporadic and the digging was confined to the early morning hours. On 2nd March the work was apparently finished for no fresh earth was evident beneath the tunnel entrance. At this time all courtship demonstrations on the part of the male had ceased. On 30th March the female was seen leaving the nesting tunnel. For the next two weeks no activity was observed around the nest by either bird. On 15th April the male was seen copulating with the female for the first time. The female was seldom seen during the next seventeen days and it was evident that incubation was under way. The male never entered the nest to help with the incubation, but did carry food to the female on the nest regularly.

Feeding of Young

The first evidence of young came on 3rd May, when both adults were observed carrying food to the nest tunnel. Close observation was maintained over hourly periods taken at different times during the day from 8 a.m. to 4 p.m. These observations showed the male to be the main provider, making ten trips to the female's one; this was probably due to the female's shyness. The male, being finger-tame, was not alarmed at anyone watching his activities. Feeding times showed an average of two trips an hour during the day, with a dozen trips or more when the birds were fed in the morning. On the basis of two evening observations, the female brooded the young during the night. The food carried to the young was quite varied, and, outside of cockroaches and mice (*Mus musculus*), all their food was provided for them. This consisted of mealworms, earthworms, smelt, ground raw meat, shrimp, crayfish, minnows, and mixed food formulas.

All live food was beaten against a rock or tree limb and killed before being fed to the young, with one exception, mealworms, which were fed alive. The adults would not feed the young any one kind of food over a period of time, but would purposely vary the aforementioned foods. One trip would be a mealworm, the next an earthworm, then possibly a piece of meat or fish, etc. From observations it was noted that the male bird never made more than three trips with any one kind of food. This habit was consistent throughout the entire feeding programme of the young in the burrow. The male always left the nest-hole tail first, while the female always emerged head first. The female soon lost the racket tip of her tail from turning

Young *Momotus momota* first day out of Nesting Burrow (May 30). (Note large eyes, short bill, and absence of black spot on breast.)

Copyright] [*R. W. Hawkins*

Male about to Feed Young with Mealworm. (June 1.)

To face p. 232.

Young at Feeding Tray, June 19. (At this time the young are completely independent of the parent birds.)

Copyright] [R. W. Hawkins

Young, June 20. (Note spot on breast.)

To face p. 233

in the tunnel, whereas the male retained his due to his custom of backing out. On the morning of 30th May, two bright-eyed, immaculately clean young Motmots put in their first aviary appearance. The most striking part of the young birds was their short bills and tails and, due to the short bill, their eyes seemed very large. The tail rectrices showed the characteristic weakening of the barbules at the shaft. In body, size, and colour they resemble the adults. The wings were fully developed and they experienced no difficulty in flying. Both young were exceedingly tame and permitted one to approach within a few feet before taking alarm and flying.

Defence of Young

On two separate occasions I was fortunate enough to witness the male attacking and driving away from the nesting area a large wood turtle. His attack would begin by flying down on the ground, confronting the advancing turtle with wings outspread and feathers puffed out. This was apparently to bluff the turtle into retreating. When this failed to halt the advance, he quickly flew in and delivered a hard thrust with his bill to the reptile's head. With two of these blows the turtle wasted no time in beating a hasty retreat to the sanctuary of the pool. Whenever the Cock-of-the-Rock (*Rupicola peruviana*) appeared anywhere near the young, the male Motmot attacked the larger bird with such determination that the Cock-of-the-Rock would quickly leave the vicinity. The female Motmot was seen chasing smaller birds away from the young on several occasions.

It had been the writer's intention to expose the nesting tunnel for a cross-section photograph to include with this article. This decision was changed when the male was observed copulating with the female and renewing his mating performance on 2nd June. The female was observed entering the nesting tunnel and, to all appearances, a second nesting is in progress.

By 20th June the young were completely independent of their parents for food. At this time the adults paid them no attention and were proceeding with their second nesting.

* * *

BUDGERIGARS AT LIBERTY

By Rosemary Upton (Ingatestone, Essex, England)

Having enjoyed a garden decorated with Budgerigars for just over three years, I was delighted to know that at the London Zoo a liberty aviary has been opened by the Duke of Bedford. It is a memorial to his father, the pioneer of homing budgerigars.

The general plan for managing an aviary of these birds has been

described by the late Duke of Bedford in his articles in the AVICULTURAL MAGAZINE, and is all in the booklet *Homing Budgerigars*, but it might be of interest if I add just a little that I have learnt from my experience with these liberty birds.

First, I know that one must aim at flying not less than two hundred birds, and in the winter try and manage about three hundred. Half a dozen birds here and there make no show at all ; it is the flock of fifty or more flying round which leaves people open-mouthed and speechless ! And to have a large number one must hang the nest-boxes in three tiers, unless of course one intends building an aviary like a miniature Albert Hall. Boxes placed at different levels do, however, lead to differences of opinion between some birds. Amongst the ladies there is the complete snob who cannot live in a basement flat, but must have a top floor penthouse, and there is probably not one of them vacant. Into battle she goes with beak and claws, and some poor bird will be evicted unwillingly from her home. That trouble maker must be caught and put into Holloway Prison, which is a small aviary standing at some distance from the liberty one ; there she must repent with other wicked women. The free-flying cock birds will visit them and gurgle sweet nothings through the wire netting, which helps to reform them, and they are returned later to the big aviary, only too willing to settle down to a peaceful married life.

Some birds breed in the winter, but I find fewer do so each year, and this is obviously all to the good. Those that insist, I limit to two eggs. During the summer, the clutches are not limited, and through colour ringing a number of birds, I have proved that they do not breed so young, as when kept in an enclosed aviary.

Every day the trap is taken out and the birds given their freedom, though I do not do so, if there is a fog or a snowfall, but they have been overtaken by both, at various times, with no ill-effects, but there was an ugly rush for " Home ".

All millet and canary seed is dressed with cod liver oil in the winter, and the birds have as many oats as they require. I never give frosted green food, though they help themselves to plenty of frosted grass ! In very hard weather, the bowl of drinking water is stood over a tin containing a night light. When grass seeds are plentiful in the summer, the seed bill drops considerably, the birds will wander in flocks as far away as half a mile in search of this food.

On the sides of the Woburn Aviary which is now at Whipsnade, there were entrance funnels, to help young birds to find their way home. I have never pampered them in this way, sooner or later the one and only entrance will be discovered.

I only hope the liberty aviary at the Zoo is as successful as my own, and one or two others I know of, as this great idea of giving Budgerigars their freedom came from the late Duke of Bedford.

STUDIES ON GREAT CRESTED GREBES

By K. E. L. Simmons (Tilehurst, Reading, England)
Illustrated by Robert Gillmor

(*Continued from page 201*)

5. Platform-behaviour

From Selous's observations, the actions and ceremonies connected with coition are quite elaborate—almost of the same order of elaboration as the courtship-ceremonies, though the two rituals are completely independent and appear to have developed along quite different lines.

Huxley, 1914 : 502.

In spite of their elaborateness, the courtship-ceremonies of the Great Crested Grebe are not, strictly speaking, *fundamental* sexual activities, unconnected as they are with the ritual surrounding copulation. As was discussed previously, their primary function lies elsewhere in the realm of appeasement rather than in that of sexual stimulation. Now the picture may be completed, for those truly fundamental activities of soliciting and copulation will in turn be described and briefly discussed in this section, together with the other aspect of the grebe's platform-behaviour—nest-building and the topics connected with it. Treatment of the parental-behaviour (the long routine of incubation and the raising of the young) will be the subject of the final instalment.

No detailed description of what I have called the "platform-behaviour" has yet appeared in the literature, and this account is based mainly on my own material. At the turn of the century Selous published some valuable observations in diary-form, which were later usefully summarized, clarified, analysed, and slightly amplified by Huxley in 1914. Further notes (and some Continental references) are given by Hanzák whose paper, though extending our knowledge somewhat, also contains some inaccuracies.

Narrative

Before the behaviour is described in more detail, a general picture of the sequence of activities and of the routine at such times may be traced.

Normal Platform-behaviour

Most pairs of Great Crested Grebes search for and select a nest site after a variable period of courtship in open water (see p. 132 and following). On well-populated lakes this site prospecting may lead the birds into occupied territories from which they are driven, but

finally the pair usually manages to find an unclaimed spot or, more rarely, to annexe part of an existing territory. While the two grebes may begin to build a platform industriously on the very first day that they have established themselves, often this initial work is of low intensity only, especially if the couple is still courting well as is often the case. Indeed, if relations with neighbours and intruders are strained, and if the pair has had only a short courtship period previously (see p. 196), the first days of the platform-cycle may be largely taken up with such courtship and very little serious building done. Soon, however, more purposive construction may begin. The nest-platform can assume appreciable proportions in quite a short time, as Huxley notes, and as soon as it does become solid enough to support the weight of a grebe and lies not too far below the surface of the water, soliciting may start, perhaps incompletely and irregularly at first. Both male and female ascend the platform, one at a time, to display. As soon as such soliciting becomes regular, the building tempo slows down for the time being and a day or so later coition itself is likely to commence. A period of intense sexual activity on the platform follows and then declines as egg-laying nears. During this time of reduced soliciting and copulation nest-building intensifies again. Also, as in the first good period of building, the birds' attention may not be confined to a single structure. For several days, too, before the appearance of the eggs, male and female sit irregularly on the empty nest-platform. At first this " premature-incubation " merely follows periods of soliciting when sexual impulses are weak in at least one of the partners. Later, during the period of declining sexual activity, the grebes may definitely ascend the platform just to sit on it, extended " spells-on " usually occurring when the mate is totally absent. There is of course no regular alternation of the empty nest, as when true incubation has started, and the shifts average much shorter, generally not exceeding 10–15 minutes, though one female sat for as long as 70 minutes. Such behaviour is obviously an expression of the brooding urge though grebes sitting on the empty nest perform none of those activities done later in relation to the eggs—such as opening the brood-patch, shuffling-down, and so on. Coition continues infrequently during the laying period.

During these platform-stages, and it is especially noticeable in the period just before egg-laying, the male and female take it in turns to leave the Type B nesting-territory, that has no immediate access to open water, to feed away from it, leaving one of them alone in the nest area while the other is gone. A sexually responsive female grebe sometimes advertises for her mate if he is overdue. Very occasionally both partners are absent at the same time, but such a procedure has obvious disadvantages, for it leaves the territory unguarded from intruders and expanding neighbours. In those territories with

immediate access to free water, and in Type A territories with their defended feeding water, such a routine is less conspicuous of course.

Such, then, are the barebones of normal platform routine. The shortest period known to me for the duration of these stages of the cycle is about 8 days (Pair C in 1948) and a week to a fortnight would seem to be the rule in those pairs which start their cycles at the most suitable time of the year—from approximately April onwards. Some pairs, however, start early. In 1949 one couple had already reached the premature-incubation stage by the very beginning of January, and in mild winters platform-behaviour is quite regular locally in a minority of (? older) pairs from mid-January onwards. Cold spells, and later wet ones, interfere with the cycles of such early birds and prolong the platform-stages for as much as 2–3 months, the grebes concerned even at times having to perform weather-movements to ice-clear waters, perhaps the sea. The first eggs never appear, locally, earlier than mid-March.

Activity at "Substitute" Sites

From the regular to the irregular. The behaviour of those grebe pairs that, although at a relatively high sexual pitch, do not manage to establish themselves, at least initially, is full of interest. They trespass furtively into the territories of other pairs and, if possible, start to build or to use existing platforms for their brief, snatched sessions of sexual behaviour, until observed and driven out by the rightful owners. Such birds are the most likely of all grebes to employ "substitute" platforms in places unoccupied by others and hardly suitable for breeding. These substitute-sites are usually places such as small hummocks of gravel, the overwashed and sloping sides of banks, islets or sand-spits, and so on, all of which give support to the soliciting grebe. One bird even ascended a floating plank of wood to display. Occasional breeding is attempted at such places and young sometimes reared. The classical case was recorded at Burghfield in 1949. The pair in question (S 49) was first seen soliciting in the shallow water of the sand-spit on 4th April, and platform-behaviour continued until 13th April, except that *no building* of any sort occurred. On the 14th of the month an egg was laid on the bare sand (premature-incubation having started a week before) and only then did the grebes start to gather weed and place it about the egg. The birds were robbed by some unknown predator (probably louts) and deserted the site. The year previous, at the old Theale gravel-pits (Berkshire), a pair of grebes successfully reared three young from a clutch of eggs laid on bare gravel on an islet. Again only a very small amount of weed was present. A similar record of a very scanty nest on an islet comes from Wilstone Reservoir (Report on Birds observed in Hertfordshire in 1946). This, together with the others, seems to suggest that, where

these substitute-sites are sufficiently raised to form a pre-existing, artificial platform, the birds do not build there, but are " content " to leave out the nest-building stage of their cycle prior to egg-laying, if highly worked-up sexually.

The Nest-platform

Selous and Huxley drew a sharp distinction between the casually built " pairing platform " (used more or less exclusively for soliciting and copulation) and the " true nest " (used eventually for breeding). Such a distinction, though useful, does not always exist. Some pairs only build one structure which serves all purposes. Others may construct as many as three and then employ any one of them to hold the eggs. As Hartley (1937) says of the Dabchick : " That there is no initial psychological difference between the true nest and the small weed-platform is suggested by the fact that the ' invitation pose ' and copulation take place on both." Huxley himself states that " the birds may build several incomplete nests or platforms before one finally chosen to be the true nest is finished and laid in ". It all amounts to the fact that a " pairing platform " is a potential nest that for some reason has not been used eventually. At times the birds have obviously not been selective enough in their first building spells and have chosen an imperfect site which is suitable for mating, but not for breeding. Such is the case with the occasional " free-floating " platforms.

In this paper I have used the names " nest ", " platform ", and " nest-platform " rather indiscriminately, though tending to use the first to denote a true nest. Of the three, " nest-platform " is the most useful as a general term.

The Nest Site

Grebes build in a variety of places but " in general nests are placed in sedges and reeds at the water's edge " (*The Great Crested Grebe Inquiry, 1931*). Most of the nests that I have found in Berkshire, Hertfordshire, and Wiltshire have been tethered to waterside vegetation of some sort (*Phragmites*, *Typha*, *Persicaria*, *Salix*, etc.), with at least part of the structure awash, for the grebe likes to swim right up to the base of its nest. The nest is often hidden in cover, more near the open water than the bank if possible, but exposed ones are by no means rare, some being supported by underwater vegetation or built up from the bottom in very shallow water and so on. One very memorable nest, found at Braydon Pond (Wiltshire) in 1944, was partly fixed to a slim wooden stake and partly floating in a depth of well over 5 feet. To reach it, I waded until the water was up to my chin. At Burghfield, flooded willow clumps and trailing willow branches are much favoured.

Grebes' nests are liable to suffer from the opposite dangers of flooding and stranding, but the birds do not readily desert in such circumstances. Flooding is most likely to be disastrous for the eggs when the water level rises during rough weather, especially in the laying period and early days of incubation when some nests tend to be less raised above the surface than later. Like other aquatic species, grebes build up the nest when their sitting routine has been upset by water splashing up over the rim: they get "restless", rearrange material, and get down from the nest to add fresh cargoes of weed. Locally, most grebes' nests are situated not far from relatively deep water, so that when stranded after spells of drought they are seldom left so completely high and dry that the birds cannot manage to clamber clumsily up to take turn on the eggs.

Selecting the Site

The male and female often investigate possible sites together, swimming purposively from place to place, perhaps one bird leading the way. Sometimes each goes its own way for a while and the female is likely to advertise for her mate when separated from him. As already stated on page 134, the "choice" of a site "involves entering likely cover, commencing to build there, and displaying, resting, and preening in the immediate vicinity". Either sex may initially prospect a particular site but the presence and activity of *both* grebes there ensures its final adoption. Once the pair has settled down in the territory further platforms may appear, again usually the result of joint participation of the two sexes. Sometimes the male, and apparently *only* he, may start a platform on his own in addition (as Selous also found). I am certain, however, that these so-called "cock platforms" are never entirely the sole affair of the male for long, the female collaborating with him if he persists in building there, and have no deep significance as indicated by Huxley—"The mysterious platforms of the cock remain as one of the few truly secondary sexual characters of the species." Rather, multiple nest-building of this sort is merely the result of the male's apparently greater urge to build than his mate's, a difference of degree not of kind. The nest-platform that will finally contain the eggs is that one which, while not necessarily the last to be made, is the last to have joint construction done at it by male and female before the onset of ovulation.

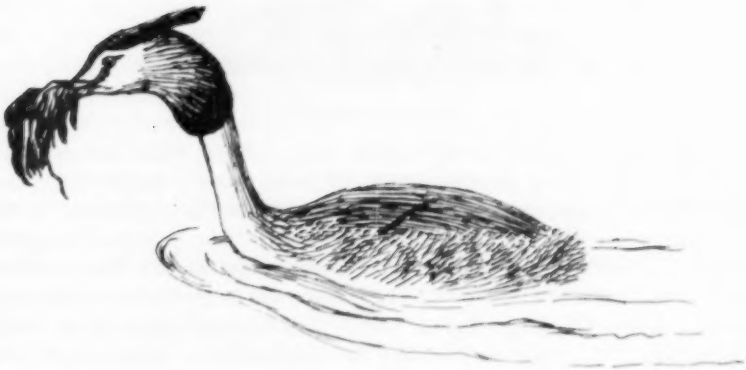
Building

Great Crested Grebes are efficient if not very elaborate nest-builders. Their general scheme of construction, in spells of persistent building, is to bring as much material as possible in a short time and to pile it up for later arrangement. This results in the speedy appearance of a

platform for sexual purposes. Both sexes work hard, the male seeming, in my experience, to take the larger overall share as is implied also by the *Grebe Inquiry*. Reporting on Selous's observations, Huxley says on this point : " As to the part played in nest-building by cock and hen respectively, Selous says in regard to this pair : 'The interest taken by the male in the nest has been very marked throughout, more so even—in appearance, at any rate—than that of the female, though in the actual building of it she has been yet more efficient than he.' " Hanzák, however, states that the female does most of the work at nest-platforms in cover and the male most on the free-floating ones, which are never used as true nests. None of these totally untethered nest-platforms have ever been made at Burghfield though the *Grebe Inquiry* mentions that " At Stoke Newington Reservoir (Middlesex) a nest was to be seen gently wandering all round the reservoir in 1929 ".

There are five main activities in nest-building : the collecting, transporting, depositing, arranging, and trampling down of material. Many nests are made predominantly of sodden and decayed sunken weed, the same " dark ribbony " stuff used in the weed-trick display. Fresher green leaves and stalks of aquatic plants are also employed, and small dead waterlogged branches of up to about two feet in length are chiefly, but not entirely, found in the base of the platform below water. If the predominant material is anything else besides sodden weed the nest still depends on that to bind the rest together. This weed and many of the other items are obtained from below the surface by diving, but some stuff, especially growing water-plants, is broken off from the parent source if not too securely attached. One male grebe was seen to pull grass from the bank and take that to the nest. Material is collected as near to the site as possible, often mainly from within a few feet of it. Some birds have to travel and bring it from as much as 50 yards or more away ; this is unusual unless the immediate nest area is devoid of any suitable material. Only single branches are carried at a time, held by the end and trailed, floating, behind the grebe as it swims back to the platform. On the other hand, large cargoes of decayed weed, so thick that the bill shape is obscured, may be brought at once. After the initial foraging dives, the birds always journey across the surface on their way to deposit the material, never diving along *en route* as they may when bringing food for the young. Selous recorded 74 visits in 40 minutes from the pair he watched in 1900, the female then continuing a little on her own while the male, soon after, took 28 loads of stuff to his " own " platform. Next day the two birds brought 100 cargoes in 50 minutes. In my experience, at peaks of building activity, a visiting rate of one load a minute by each grebe may be maintained for some time. The birds are able to make this speed because their building method is simple and rapid, as mentioned above.

Carrying a branch to the nest-platform.



A large cargo of weed.

Depositing a load of weed.

When the grebe reaches the site, it immediately deposits its load from the water, usually on to the slope of the platform. If very active in collecting, it will then move quickly away to forage anew. There is a special " pushing " movement used in laying down damp weed—a slight, upward, shovelling quiver of the bill (rather like that of a dog covering a bone with earth). This is analogous with the side-to-side

fixing movements of many other groups that build mainly with more rigid materials, needing to be woven if fine (e.g. many small passerine birds), or at least interlocked if coarser (e.g. doves, lovebirds, hawks).

Sometimes one of the pair will ascend the platform especially to arrange the material there. However, this is usually done during breaks in soliciting or during spells of premature-incubation, and so on. Standing or sitting, the grebe picks up a piece of weed from

Arranging material.

here and lays it there. It is in this way, mainly, that the structure grows from a rather shapeless pile of weed into a more functional nest, with a central depression for the eggs. This last is formed by the bird piling up weed round itself as it sits. The platform is given solidarity chiefly by the incidental movements of the heavy-tooted birds but occasionally, before any eggs are present, deliberate trampling is done with the large lobed toes. Huxley mentions this rather graphically: "Lying in a punt in the reeds, I have heard this trampling, first on one side, then on the other—squelch, squelch, squelch—sounds of some creature trampling heavily with alternate feet on something sodden."

Soliciting and Copulation

As soon as the platform is substantial enough, and so long as at least one of the grebe couple is really sexually inclined, the birds begin to solicit on it. Both sexes "invite" and "rear" (see below), at first the male perhaps as frequently as his mate though later, during the period of regular copulation, which in normal cycles follows the onset of soliciting by a few days, she does so more than he. In the case of those pairs that start their cycle in the winter, the first copulations may occur months before egg-laying, though in more normal spring cycles it begins 1–2 weeks before. In at least the vast majority of cases it is the male that actually mounts, but there is some evidence

that the female may occasionally do so also (see below), and she certainly quite regularly shows the intention of it. Thus, as we cannot speak of an essentially " male role " or of an essentially " female role " in describing the fundamental sexual behaviour of the Great Crested Grebe, it is convenient to have two neutral designations for the bird displaying on the platform and for the bird in the water. Huxley (and also Hartley) used " passive " and " active " respectively but, as the soliciting Great Crested is often far from merely passive, I have therefore modified this to " soliciting " and " active ". In the descriptions given below, it should be remembered that the soliciting bird may be either male or female as may the " active " one in all stages of reaction up to actual mounting, when only the male absolutely certainly is involved.

Soliciting

Soliciting does not depend on any fixed ritual or set of circumstances for its elicitation, the presence of the mate in the immediate neighbourhood of the nest-platform being the major stimulus. The behaviour often follows a joint swim to the weed pile, occasionally after one or both birds have " invited " in the water, or more usually after a Head-shaking Ceremony. Frequently, too, one of the pair may ascend the platform to display during a spell of building or get up for some other purpose and then solicit when the partner comes near. If the birds have more than a single platform they may solicit on any one though usually showing a preference, if only a temporary one, for a particular structure.

There are two soliciting-displays. The first to appear during the progress of the reproductive-cycle is what may formally be termed the " invitation-display ", a posture that Huxley called the " passive pairing attitude " to distinguish it from the " active pairing attitude " or mounting. While a grebe may rarely " invite " in the water near the nest-platform, sometimes with its head resting on the base, usually it gets up on top of the weed pile to display. It jumps awkwardly up, perhaps fiddles with material there, and then sits down. When " inviting " at full intensity, the grebe stretches its neck well forward, with the head ornaments depressed, and remains inactive. On a low-lying platform, and in the water, the neck may normally be more or less flush with the surface, but on well built-up structures, it inclines downwards along the line of the slope. When the " inviting " bird is not fully worked up, or when the " active " one is unresponsive or not really near the platform, it raises its head a little with the neck curved. If the " active " grebe should then approach the soliciting one, the latter often then reassumes the more intense version of its invitation-display.

Early on in the cycle bouts of soliciting may consist only of weak

" inviting ", but later this display increases in intensity and frequency. In addition a more complex activity appears, the grotesque " rearing-display ". The history of this " rearing " in the literature is very puzzling. Few British ornithologists seem to have seen it, both Selous

Soliciting : the invitation-display.

and Huxley recording it only briefly and neither discuss its significance. Yet on the very first day that I watched grebes at the platform, I saw the display several times and subsequently found that it occurred regularly. Two other grebe enthusiasts, C. E. Douglas and Miss L. McCartan, have also often observed it, and Hanzák implies that he has too, though he wrongly states it to be a " special epigamous position " of the female *only*.

Huxley's account of " rearing " in his 1914 paper goes as follows (he himself not having yet seen it). " To complete the description of the mere attitudes, it remains to add that, before sinking down into the passive pairing attitude . . . the birds usually assume a curious fixed and rigid pose. I will quote Selous's words : '. . . curling his neck over and down, with the bill pointing at the ground [weeds], perhaps six inches above it, he stood thus, fixed and rigid, for some moments (as though making a point) before sinking down and lying all along. There was no mistaking the entirely sexual character of this strange performance, the peculiar fixed rigidity full of import and expression.' " Later, in his 1924 paper, Huxley gives a second record. " Then the hen got out on to the nest and assumed a remarkable attitude, the body slightly inclined forward, the neck, with a slight curve in it, sloped downwards at an angle of about 30°. There was a curious rigid look about the bird, which was accentuated by the fact of her remaining motionless in this position for several seconds. She then sank down on to the nest . . . The male approached, but soon departed again. The female then raised herself into the same rigid standing position for some seconds, and a second time sank down from this into the coition-attitude." Hanzák, in his turn, reports as follows : " At the time of copulation the grebes use a special position, taken up only by the female sitting in the nest ; ♀ in the presence of a ♂ swimming round stands upright in the nest and bends its neck so that it lays its head on its underside. The beak nearly touches the nest." The only other record that I can trace of the rearing-display comes from the 1931 *Grebe Inquiry*. " On 18th March, 1922, a pair on a

Soliciting : the rearing-display.

The Slavonian Grebe seems also to " rear " when soliciting (from a photograph by Hosking and Newberry).

Cheshire reservoir left the water and got into a marshy spit of land, where the male displayed, stretched to his full height, lowered his bill until it rested along his breast, then lay in shallow water and stretched his head along the surface." I give all these observations in full because this very characteristic behaviour has been largely

overlooked, *The Handbook of British Birds* not even mentioning it for the Great Crested or for any other species of grebe. Hanzák states that the Black-necked Grebe has a similar display as also, apparently, has the Slavonian Grebe, judging from the photograph in Hosking and Newberry's *More Birds of the Day*. On the other hand, Hartley did not observe it from his Dabchicks.

All the descriptions cited above are incomplete and deal only with the less intense form of the rearing-display. The full range of the performance is as follows. The soliciting grebe gets up on to its platform and usually " invites " first of all, though it may sometimes do the rearing-display immediately instead. In any case, in the majority of cases the bird suddenly rears up from the horizontal " inviting " position so that its body stands almost vertical. At the same time it quivers its closed wings in short spasms (a movement of the primaries outwards), flashing the white areas which are otherwise hidden. For a moment the neck curls up with upheaval of the body, but then it is arched downwards sharply in a grotesquely rigid manner at an angle of about 45 degrees to the body. The head with tippets well spread is tucked under with the bill pointing just in front of the feet, a few inches above the level of the platform. The grebe remains thus briefly and may then relax a little, this being the less intense moment of the display recorded by Selous, Huxley, and the others. Afterwards the birds subside into the " inviting " position, to " rear " again later, or first of all picks up and drops weed or preens its underside before so doing. Occasionally it performs a second rearing-display without first unfolding into the less intense soliciting attitude.

Well developed bouts of soliciting consist of " inviting " interspersed with " rearing ", the latter behaviour being particularly prone to occur if the " active " bird is slow to respond. However, even during the period of regular coition some sequences are made up entirely of the inviting-display. During the decline in sexual activity (when premature-incubation is in progress before egg-laying), the rearing-display becomes infrequent again as it was before full soliciting commenced.

Behaviour of the " Active " Bird

The response of the " active " bird in the water near to its soliciting mate varies considerably, ranging from apparent indifference to the full act of mounting. It may not approach the platform at all but drift away from it, preening and so on. On the other hand, it may go off to forage for nest-material, bringing weed and adding it to the platform, or remain at the structure and fiddle about with stuff at its base. In all these cases, the grebe's sexual feeling is just not strong enough, or uninhibited enough, for it to mount and copulate. When the tendency for the latter increases the " active " bird may start to

headshake spasmodically at its mate, sometimes habit-preening as well. The soliciting grebe may finally respond to this and a joint ceremony results, as previously described on page 188. If so, the soliciting bout often ends soon after with copulation unachieved.

Sometimes the " active " bird will mount soon after its mate starts to display on the nest-platform ; at others repeated alternations of " inviting " and " rearing " are needed to raise it to the right pitch.

Copulation and Behaviour Afterwards

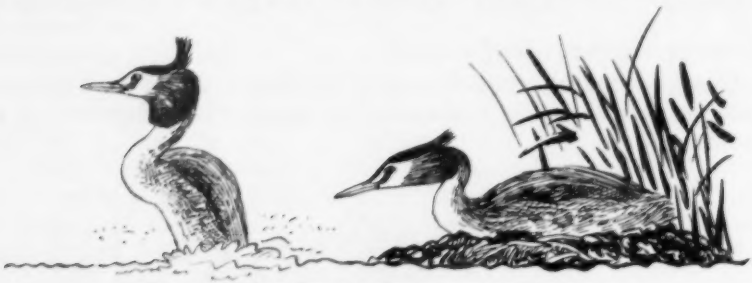
After any or all of the preliminaries mentioned above, the " active " grebe may show real signs of wishing to mount. It swims round so as

The " active " grebe of either sex may show the intention of mounting the other.

In mounting, the male leaps up with a harsh, rattling call.

to be directly behind the soliciting mate. If mounting does not then follow, the bird may continue to poke about the nest and to head-shake spasmodically at low intensity. It shows its real intentions, however, by repeatedly swimming right up to the base of the platform,

making aiming movements of the head as if about to jump up, only to move away backwards again. While all this is going on, the bird's tippets are usually depressed rather furtively but the crest is well raised—a combination which gives it a rather surprised look. The soliciting of the other bird, especially its " rearing ", may spur the " active " one on if it is thus hesitant, and its manner becomes



The male dismounts, landing upright in the water.

increasingly more " confident " until finally, with tippets now markedly spread out laterally, it mounts. As this is predominantly, if not entirely a male activity, I shall refer to the " active " bird as a male from this point. He leaps out of the water on to the female's back with his closed wings quivering, as in the rearing-display, and uttering a loud and harsh rattle, described by Hanzák as characteristically throaty and " sounding like a creaking *ee eee* ". Standing there, with body almost upright, neck arched forward with the tippets fully spread and crest raised, he copulates for up to approximately 6 seconds or so only, the rattling call, meanwhile, changing to the more common ticking one. Then he waddles along the female's back, and over her head, to land upright in the water with much splashing of water as he remains where he alights, making paddling movements of the feet to keep him up. From the vertical position with rear-end submerged, he soon subsides into a normal floating one and begins to head-shake, at times quite intensely, with his back to the female. She, meanwhile, after remaining in the full " inviting " posture during coition, has raised her head and, when her mate begins to head-shake, joins in. This joint, post-copulatory, head-shaking ceremony is a regular feature. It soon dies down and the male, gradually relaxing his position, swims slowly away, perhaps preening. The female may also preen spasmodically before getting off the platform or resettling to sit.

Selous and Huxley give little details about actual coition itself and do not mention the activities that follow. Hanzák does record that an " incomplete courting " once came after copulation but implies that this is unusual. Also, while doubting, correctly, that the Great Crested Grebe regularly uses its wings to keep balance during the

sex-act (as maintained by Staněk and Hesse), he wrongly figures the male more or less lying along the female's back when mounted.

It is of incidental interest to record that the bird which mated on the sand in 1949 (see above), landed on firm ground after coition and performed there quite typically before waddling back to the water.

The post-copulatory Head-shaking Ceremony—male with back to female.

The Evidence for Reversed Mounting

In 1901 Selous saw the smaller of the pair of grebes he was watching, and therefore the presumed female, twice mount its larger mate. He did not witness the converse of this, and one would have expected him to do so if the larger grebe was behaving anything like a typical male. However, I agree with Huxley that there is little likelihood of the smaller bird being anything else but a female. Since Selous's time, our knowledge on this point has hardly progressed at all and we are in urgent need of really definite cases of reversed copulation in this species. I can find no certain record in my own notes of a female Great Crested Grebe mounting a soliciting male, though I have a vague memory of seeing this in 1948 when under the impression (falsely given to me from several standard works) that such behaviour was regular. Likewise, Hanzák states that he has " not been able to observe in the grebes the two-sided pairing which often occurs in species with a small sex dimorphism and mentioned also in connection with the Great Crested Grebe (Niethammer, 1942) ". While, therefore,

the evidence for reversed copulation is slight, I do feel that it is in fact very likely to occur occasionally, judging from my own observations on females showing the intention to mount and also from an assessment of the " bi-sexual " nature of most of the grebe's behaviour patterns.

Discussion

While presenting several problems of its own, the platform-behaviour of the Great Crested Grebe is much easier to understand than the courtship activities, and a few points will now be dealt with very briefly.

First of all, the derivation of the soliciting-displays. On grebe standards, the invitation-display is a relatively simple one in which the body position best suited for effective mating has been exaggerated by the extension of the neck, a movement seemingly of no utilitarian value so far as mounting is concerned. The probable original form of this posture is shown by the Dabchick which does not stretch its head forward when adopting its " invitation pose " (Hartley). In contrast, the rearing-display is much more complicated. There are two main components. The initial erection of the body with wings quivering closely resembles the behaviour of the male immediately on mounting the female. I would hazard the suggestion that, in actual fact, this has its origin in mounting behaviour. The second part of the display, the downward extension of the neck, may possibly be founded on movements directed at the nest for some purpose. Hanzák points out that " This is very reminiscent of the position in which the grebe arranges the eggs under itself ", and the similarity is stressed by the angle of the bird's head. However it must be pointed out that, after the main " rearing " action, the soliciting grebe may sometimes toy with weed on the platform or preen its underside, so the neck movement of the display is perhaps equally likely to be based on initial nest-arranging or preening behaviour. More study is needed.

The chief internal drive which causes a grebe to ascend its nest-platform and solicit is quite clearly a sexual one, using the term " sexual " in a strict sense, that of " desire to copulate ". Investigations so far give little evidence that other impulses play an important role (as they do in courtship), though possibly a weak escape tendency is there because the " inviting " bird does depress its tippets and crest. When " rearing " the grebe is obviously in a more intense sexual mood than when merely " inviting "—many things point to this conclusion, not least of all the fact that the rearing-display is probably partly derived from actual copulating movements.

The " bi-sexual " nature of the Great Crested Grebe's sexual behaviour may perhaps be best appreciated if we consider the sequence " inviting → rearing → mounting " as one in which the sexual

tendency is increasing in strength throughout, as all the evidence suggests. Only the male *regularly* reaches the full limit of sexual feeling and it is he, therefore, that usually performs the active role in coition and not his mate. The female, being at a relatively lower sexual pitch, regularly only reaches a state of showing intention to mount, but occasionally, when her feelings are exceptionally strong for one of her sex, she too may actually mount in all probability. In normal copulations the initiative is taken by the female. The " bi-sexual " arrangement is of special value to the male, therefore, because, apart from being able to express himself at times of relatively low sexual feeling, he can also, if highly worked up, solicit when the female does not take the initiative. The result is an overall increase in sexual efficiency. Huxley has discussed this subject from a mainly different angle and his argument is worth repeating here. Because of the need for a firm support in copulating, the female grebe had to take the initiative by assuming the invitation-display. Unlike the males of many other species, the male grebe, therefore, had no means of expressing his desire to mate. Hence, " the pairing attitude of the female was transferred to the male to give him, too, a means of expressing his readiness to pair—to enable him, should he wish it, as well as the hen, to take the first step towards the performance of the act of copulation by the pair." In addition this process of " reversal of the sexes " went further and the female came to possess the mounting behaviour of the male.

The soliciting-displays act as general sexual stimulants to both sexes, much more so than courtship, the function of which lies mainly elsewhere. " Inviting " is something more than a passive position for mating. Together with " rearing " it is also a display in the strict sense of the word, that is a signal-movement functioning to stimulate sexual responses in the mate. Female soliciting helps to release mounting in the male. Male soliciting, while only infrequently (if at all) releasing actual mounting on the part of the female, does at times raise her to such a pitch that she shows a desire to do so.

Copulation in grebes always has the appearance of efficiency and success. There is none of the half-hearted standing on the female's back on the part of the male, or any breaking away before consummation on the part of the female, that one finds with many other birds. The reasons for this are : that the female must be sufficiently intense in the first place to get up on the platform at all ; that the male will not mount unless she is soliciting, and that he will not do so in any case unless he himself is at a very high sexual pitch. I believe, partly from observation, partly from an intuitive feeling, that the " active " grebe understandably " dislikes " jumping up out of the water. His hesitation, and the depressed, furtive tippets, suggest some fear. When this is suppressed by his over-riding sexual urge, and only then, the male

will mount. All this results in his being really purposive when he does finally copulate and makes for successful mating.

Actual copulation in the Great Crested Grebe lasts for quite a short time, some six seconds or so. This supports my contention that the male is very ardent indeed when he mounts, and also that grebes find it physically easy to mate quickly. There is much variation in the time birds take to copulate and many factors which determine this. In Blackbirds (*Turdus merula*), for example, Dr. D. W. Snow tells me that it takes " less than a few seconds ", apparently because other males are liable to interfere. No such interference, or the possibility for it, has been seen in grebes. On the other hand, Masked and Peach-faced Lovebirds (*Agapornis personata* and *roseicollis*) in my aviaries copulate for up to four minutes. There is no interference with mating in these species and the males are able to work up to full intensity during the sex-act itself.

Reversed mounting occurs in several species, notably pigeons. In discussions of this phenomenon in the literature (for example, that of Huxley himself and of E. A. Armstrong, in *Bird Display and Behaviour*), it is assumed that such behaviour occurs *regularly* in the grebe and that it is strictly comparable with the reversed mounting of the other birds. Assuming for the moment that the female grebe does occasionally mount the male, as I firmly believe she does, this activity comes after a soliciting spell by the male and *not* after a mounting attempt by him. The latter is the usual procedure in pigeons and other species, as, I believe, my friend Derek Goodwin pointed out to me. Only recently, after I started to type this discussion in fact, I saw such a case in my aviary. A female Blue-winged Parrotlet (*Forpus passerinus vividus*) left her nest and joined the male. He attempted his usual one-footed mounting with swaying head and body but, as I carefully noted, his tail did not bend sufficiently under the female's, and he soon stopped. The female immediately sidled up to him and in turn placed her foot on his back and drew her body close. Afterwards they both did the " screwing ", side-to-side regurgitating movement which normally the male only does. In all species, grebes, pigeons, parrotlets, etc., this " male " mounting behaviour on the part of the female is due to a very intense sexual urge that is greater than that normally experienced by the sex, and is often also the result of inadequate sexual response of the part of the male.

After dismounting the male grebe usually initiates a post-copulatory Head-shaking Ceremony. This is caused, I think, firstly by a slight surplus of sexual feeling left over after the speedy copulation, and then by escape and aggressive tendencies aroused by close bodily contact with his mate, a situation known in other species to produce such a set-up. The escape urge is indicated by his upright stance in the water which is similar to the " escape-bathing " one. In several

species, the same reactions are shown after coition as after certain stages of fighting. To give one example, already reported in the AVICULTURAL MAGAZINE (Simmons, 1953), Little Ringed Plovers displacement-feed and preen during tiffs with rivals and after copulation when the mated birds also run away from each other.

Finally, a brief word on the relationship between nest-building and sexual behaviour which will be developed more fully elsewhere. Initially, the nest-platform is built up until solid enough to hold a soliciting grebe and then building behaviour declines as soliciting intensifies. If, however, an already raised substitute-site is employed there may be no nest-building during the period of marked sexual activity. Often grebes forage and bring material when their other behaviour shows that their desire to solicit, etc., is weak, and nest-building intensifies once again after the copulatory stage has started to decline. All this suggests that nest-building urges are subordinate to and depend on the sex-drive for their intensity.

(To be concluded)

* * *

PINKFEET IN THE ROYAL PARKS

By W. G. TEAGLE (Ministry of Works, England)

The news that a pair of pinioned Pink-footed Geese had nested in Kensington Gardens in 1954, and had managed to rear a gosling, was greeted with surprise, for Pinkfeet do not nest very readily in captivity. Now, in 1955, the same pair has nested again and has produced a brood of three.

The parents are two of a flock originally obtained from Peter Scott, who in 1947 presented the Ministry with eight Pinkfeet for the St. James's Park wildfowl collection. Another twelve were received from Mr. Scott in April, 1948, and were released on the Long Water in Kensington Gardens.

On 29th May of the same year Tom Hinton, then Bird-keeper for the Central Royal Parks, discovered that all but two of the St. James's Park birds were missing. Visiting Hyde Park three days later, however, he was amazed to find them on the Serpentine, where they had joined the flock of twelve. Since they were pinioned birds one can only conclude that they had walked all the way *via* the Green Park and Hyde Park Corner—a distance of about three-quarters of a mile. The migration could hardly have taken place in daylight, and one is tempted to visualize the scene as the birds filed past the Duke of Wellington's statue in the small hours, to the bewilderment of any nocturnal revellers who happened to be abroad !

During the early years of its stay on the Serpentine a few members of the flock were lost, but thirteen birds managed to accept the dogs,

the swimmers, and the rowing boats with which they had to share the water and to tolerate the smaller craft on the Round Pond. There may have been nesting attempts before 1954—breeding behaviour was noted in 1952 by the two Official Bird Observers for Hyde Park and Kensington Gardens, Charles Parsons and Christopher Hawes—but it was on 19th July, 1954, that the appearance of a small downy gosling proved that nesting had actually taken place. The young bird was closely guarded by its parents and for some time the trio usually kept a little apart from the main flock. The young bird survived the unpleasant summer and is still with the flock, although left unpinioned.

During the spring of 1955 the Official Observers could only account for ten of the fourteen geese, and hopes that this time two pairs were nesting in one of the enclosures began to rise. It was quite late in June, however, that reports reached me *via* the Park-keepers that Pinkfeet had in fact bred again, but apparently only one pair of them did so. Three goslings, all belonging to the birds which bred in 1954, were about a month old when they were seen by the Official Observers on 28th June. The accompanying photograph was taken on 20th July, by which time the goslings were almost as large as the adults. The bird reared in 1954, recognizable because of its unpinioned wings, was keeping company with the family.

The three new goslings bring the total number of Pinkfeet in Hyde Park and Kensington Gardens up to seventeen, and one may hope that a further increase can be expected next year. Meanwhile, there remain two birds in St. James's Park, the two that stayed at home in 1948 while the others went walking.

* * *

LONDON ZOO NOTES

By J. J. YEALLAND

The second of the joint London Zoo and B.B.C. expeditions set out during March, this time to British Guiana, where films were taken for showing on television and specimens of the fauna were collected. As before, Mr. J. W. Lester led the expedition and he was accompanied by Mr. H. Vinall, the Overseer of Ungulates. Mr. David Attenborough and Mr. Charles Lagus of the B.B.C., who returned by air at the end of June, made up the party.

It was hoped to bring back the animals during June, but owing to shipping delays it was not until 8th August that the collection was landed in Liverpool. Unfortunately Mr. Lester became ill and had to return to London by air. I went to Georgetown to help to bring back the collection and a list of the birds is appended to these notes.

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PINK-FOOTED GEESE REARED IN HYDE PARK.

A stay of only two weeks in Georgetown scarcely qualifies one to write of the bird-life of that crowded city, particularly when much of the time is taken up with the care of the collected specimens and making arrangements for bringing them back. The collection was kept in an outhouse at the residence of the Director of Agriculture in the lovely Botanical Gardens and hereabouts there were more birds than in any other part of Georgetown. No visitor to British Guiana could fail to notice the Sulphury Tyrant, as it is called here, but it is known there as the Kiskadee, or Kiskadee Flycatcher, a name said to be a corruption of " Qu'est ce qu'il dit ? " and undoubtedly derived from the bird's call. Like the night-long chorus of frog and toad calls, the cry of the Kiskadee threatens at first to get on one's nerves and then, after a day or two, one becomes accustomed to it and no longer consciously hears it. This bird is certainly a tyrant, but hardly a fly-catcher ; one of the main foods seemed to be grass-hoppers and it is said to eat nestlings of other birds. Two came regularly to eat food put out for cats at the nearby house and they were especially fond of any boiled rice that might have been thrown out. I once saw one on the rafters of the abbatoir, eyeing the bloody scenes below, but whether it was a regular visitor in search of food or whether it just wandered in there, I do not know.

Once or twice we caught sight of a grey-headed bird that looked to be a near relative of the Kiskadee, but I have not discovered what it was. There was one of the small Tody-Tyrants about in the trees ; it seemed to feed on caterpillars that it snatched from the leaves.

Sometimes a Humming Bird would come to the flowers of hibiscus bushes that formed hedges round about the outhouse, staying for no more than a second or so at each flower. Once, while we were working among the animals, one came and sat for quite half a minute on an overhead wire, putting its head on one side and intently studying the strange happenings beneath, and one afternoon in a very poor part of the town, where the houses were no more than wooden shacks crowded together, I saw one come to feed on the flowers of some stunted zinnias in a tiny garden. It was strange to see so exquisite a bird amid such squalor. The only Humming Birds that I saw in Georgetown were the White-bellied and Lesson's Emerald. There may, of course, be others at other times of the year. Quelch writes of the Cayenne Hermit, Longuemare's Hermit, the Broad-shafted Sabre-wing, the Violet-tailed and Green-throated Mango, Black-eared Fairy, and others as being seen in Georgetown, some of them " quite common ", but that was long ago. The American Egret, Snowy Egrets, Little Blue Herons, and the Buff-backed were quite common. The last is a self-introduced bird and seems now to be well established. An island in the Botanical Gardens is a favourite nesting place for the Egrets and Herons.

Small numbers of the Common Ani or Old Witch were sometimes about the Gardens and Black Vultures occasionally passed over. The Everglade Kite is common ; this bird lives largely, if not entirely, on the large marsh snails. In the swampy fields outside the town I saw one of these Kites swoop down and pick up a snail in its talons. These birds must possess remarkably keen sight to see the snails from a height.

A pair of Talpacoti Doves came regularly to the gravel drive and occasionally there were one or two of what I feel sure were the Thick-billed Seed-finches. A pair of Blue Tanagers had a nest, evidently containing young, quite high up in a tree : it was pointed out to me by a gardener who was engaged in what can only be described as weeding the trees with a long-handled hook. There are epiphytic plants with leaves like those of a pineapple which grow very commonly on the bushes and trees and the gardeners spend a lot of time in hooking them off—in fact they could be said to weed the trees more often than they weed the gardens.

On some of the trees there were great clusters of a narrow-leaved mistletoe : I only saw this on trees that were overhanging water and the berries were a favourite food of some of the birds.

There is a small zoo in the Gardens where, except for some Peafowl, indigenous specimens are shown. There is no bird market, but one sometimes sees a bird-fancier in the streets carrying a pet bird in a small cage—generally, I think, a Little Yellow Finch, or Little Saffron Finch (*Sicalis minor*), and a few people keep an Orange-winged Amazon, locally and appropriately known as the Screecher. There are one or two bird-catchers, but I believe they do not normally catch anything but small seed-eaters.

The protection laws prohibit the export of birds and their plumage except by an Order in Council, but there seems to be no prohibition of bird-catching.

Two days before he started back I went with Lester to the Rose Hall sugar estate on the southern side of the Berbice River, where Hoatzins are common. There is first a drive of about three hours over a rough road to Rossignol, thence by ferry across the muddy river to New Amsterdam and then a short drive to the vast sugar estate. The country is flat and marshy where a certain amount of rice growing is done. It was interesting to see Surinam Jacanas walking about in the fields, the yellow on the underside of their wings being very conspicuous in flight. Here, too, were some of the Cayenne Red-breasted Marsh-birds, locally known as Robins, and some Yellow-headed Marsh-birds, while the Black Vultures, Everglade Kites, and Egrets were quite common. A striking black and white bird was seen, always singly, here and there along the road and always near water. It was the White-shouldered Water Tyrant

or Cotton-bird. It was, perhaps, the contrast with the black of the plumage that made the white appear of a remarkably glistening quality. This is one of the many birds observed by J. J. Quelch in Georgetown, and he writes of it: "A very small Tyrant, about 4–5 inches in length, known as Cotton-bird (*Fluvicola pica*) is also usually to be found about the grassy parts of the town, and more especially by the trenches of the outskirts among grassy and bushy wastes."

Quelch's observations were made some sixty years ago when, no doubt, Georgetown was a very different place—at any rate, it was several miles from the town that I saw the first of these Water Tyrants.

The nest is said by Schomburgk to be composed chiefly of plant cotton, so that accounts for the local name. At one place along the road in a grove of coco-nut palms there were a number of nests hanging from the tips of the palm fronds, but there was no sign of occupants. Over the river were two or three Black-tailed Skimmers, but the water was muddy and swiftly flowing, so evidently did not suit other birds, for there were none but the Skimmers to be seen.

On arrival at the sugar estate, we found that some Hoatzins had already been caught for us; we had planned to return by a ferry early in the evening, but as the main object of our visit had been achieved before we arrived, we decided to return by the first available ferry. This just allowed time for me to go to see the Hoatzins in their natural haunts on the outskirts of the plantation. The tangled bushes where these strange birds live were separated from the track by a wide ditch of muddy water, the abode of numerous crocodiles. As it was around midday, all was quiet, for by all accounts the Hoatzins are active early and late in the day and sleep in the shade of the bushes during the hottest time. At a chosen spot my companion stopped the truck and clapped his hands, whereupon a chorus of querulous squawks came from the bushes and four or five Hoatzins scrambled into view. They did not attempt to fly, but made their way in an awkward fashion about the bushes and slowly disappeared. A little further on we saw a nest in a very open, exposed position with a Hoatzin sitting on it. These bushes were growing in water and mud, so the birds were well protected except, perhaps, from birds of prey. One gets the impression that Beebe (*Our Search for a Wilderness*) is correct when he writes: "Inexplicable though it may appear, the Hoatzin—though evidently unchanged in many respects through long epochs—yet is far from being perfectly adapted to its present environment. It has a severe struggle for existence, and the least increase of any foe or obstacle would result in its extinction."

The flight is very weak and the plumage appears too permeable to withstand the heavy rains that sometimes fall in that area, but no doubt the large leaves of *Caladium arborescens*, one of the Hoatzins'

food plants, provide shelter. Another food plant is the Pimpler thorn (*Drepanocarpus lunatus*), about which the birds would need to climb with care to avoid injury, for the branches are covered with long sharp thorns. Fruits are said to be eaten too, but it seems doubtful whether these would be available throughout the year. The Mucka-mucka, as the *Caladium* is locally called, was in bud during July ; this plant looked to be related to the well-known *Phyllodendron* and had the same climbing habit. It was common among bushes growing near water and, except for the youngest growth, the leaves were tough and bitter.

We gave two of the newly-caught Hoatzins to the zoo and another with an eye injury was released in a big clump of bushes interspersed with the *Caladium* growing on the banks of one of the lakes in the Gardens. Lester brought back one established bird that he had collected three or four weeks before and one that was newly caught. The latter did not live long after arrival here, but the established one is doing well—we hope—at the Bird House. It is always difficult to judge whether Hoatzins are thriving and one can only go by the amount of food they eat. I started back with two, but one died after three days and the other after seven days, so I feel sure that it is very important to get these birds well established before the journey.

Two or three days before starting back, I was brought a newly-caught Black-capped Mocking-thrush and, unlike the Hoatzins, this interesting bird took readily to captivity, was quite fearless from the first, and ate mealworms at once. During the voyage I could not induce it to eat any of the insectile food ; I mixed chopped mealworms and grated hard-boiled egg with the food, but the Mocking-thrush carefully picked out the fragments of mealworm and left the rest. Now, in the Bird House, its diet is supplemented with moths, gentles, and locusts, but it is still unwilling to touch the inanimate food. A curious feature of this bird is a small patch of bright yellow skin on either side of the throat.

Beebe refers to the calls of these Mocking-thrushes, describing how a pair sat together uttering a rapid call " hour after hour " to be answered by another pair in a neighbouring bush : " At each enunciation the half-spread tails of the respective pair of birds wagged violently from side to side as if pulled with a string. As the utterances of each of the two birds were synchronous, the wagging was always in perfect time . . . These active interesting birds have in addition an elaborate song uttered singly . . ."

There are two species only in this genus, the other being *D. albo-vittatus* of Bolivia.

The Rails and their relatives, in spite of their extreme nervousness, seem generally to take well to captivity, provided, of course, that part of the cage is covered so that they have somewhere to hide. I was

brought a small Rail or Crake only a few days before leaving and it very quickly took to eating the insectile food with a few mealworms mixed in. It seems to be an immature bird and is not yet identified. Now, at the Bird House, it is already much steadier and often comes out from its brushwood covered corner during the day. The Glossy Cowbird is common in British Guiana and a pair of these already at the Bird House were brought by Mr. Durrell in 1950, when they were received as Silky Cowbirds or Argentine Cowbirds (*M. bonariensis*). This form is much larger than the Glossy (*M. b. minimus*) and has a more southerly range. The Glossy used to be called *Molothrus atronitens*, and those that came in 1950 were the first of this race to be in the Collection unless others previously acquired had also been mistaken for the larger bird.

We returned on the S.S. *Arakaka*, a small ship that, in 1952, picked up Dr. Bombard after he had been for fifty-three days in a rubber dinghy sailing from the Canary Islands to Barbados, where he landed after sixty-five days at sea. Dr. Bombard undertook this extremely hazardous voyage to prove his belief that castaways could live " off the sea ". He took food with him in a sealed case, but he used none of it ; instead he fed on raw fish that he caught and plankton, drinking small amounts of sea water, water squeezed from fish, and rain water collected when the chance occurred. As he says in his book, *The Bombard Story*, as the translation is entitled, he would probably have become insane had he not met the *Arakaka*, for owing to a navigational error, he believed himself to be some six hundred miles nearer to land than he actually was, a belief that was encouraged by the sight of a number of Frigate Birds, Tropic Birds, and a Shearwater. This, according to a publication brought out during the war for the benefit of the shipwrecked, meant that land was near—three hundred miles at the most—whereas he saw them more than a thousand miles further out than this. After a short stay on the ship, he went back to his dinghy and landed on Barbados twelve days later. The *Arakaka* called at Port of Spain, anchoring off the harbour for a few hours to take on oil fuel and other supplies. We could not spare the time to go ashore, but Mr. Lau and Mr. Dickson, honorary curators of the Trinidad Zoo, came out bringing with them a present of three Yellow-winged, a Purple, and a Black-headed Sugar-bird. Near the islands were a few Brown Pelicans resting on the sea and a number of gulls could be seen close inshore.

Some very attractive birds have arrived at Regent's Park during July and August : these include a pair of Macklot's Sun-birds (*Chalcostetha chalcostetha*) ; two Little Green Herons (*Butorides striatus javanicus*), both of these new to the collection ; a Blue-breasted Banded Rail ; a Burmese Slaty-headed Parrakeet (*Psittacula himalayana finschi*) ; a Rosy-headed Parrakeet (*P. cyanocephala rosa*), and four

Red-crested Wood Quail or Roulroul Partridges, all presented by Sqdr.-Ldr. K. C. Searle. Another interesting and uncommon presentation was a Red-masked Conure (*Aratinga rubrolarvatus*, or *A. erythrogenys* as it is now called). A Salle's Parrot has been received in exchange. The breeding pair of Green-winged Kings had two young ones this year and these have now left the nest, as have five Quaker Parrakeets and four blue-bred green Masked Lovebirds.

The Herring Gulls have bred four young and the King Penguin hatched during July is now quite large. The Grey-headed Gallinules hatched two young in their first nest, but lost them : a second clutch was laid and the resulting young one is now a large and apparently thriving chick. It is still covered with black down and is still taking food from the parents' beaks, but it now begins to feed itself. A Green-backed Gallinule in the same aviary takes a great interest in the chick and his attentions are well received by the parents, if indeed as we sometimes wonder, they are both the actual parents. The Brush Turkeys have been nesting and a chick that evidently emerged from the mound unnoticed was found dead in the enclosure. An examination of the mound revealed four eggs, one of them apparently fertile.

Sonnerat's and Ceylon Jungle Fowl have chicks and a number of the common pheasants and geese have been reared.

Disaster overtook the flock of homing Budgerigars at the end of July when one or two cases of psittacosis occurred among them and all were destroyed, the perches and nesting boxes being burned. No doubt this disease, which is, of course, by no means confined to parrot-like birds, was contracted from the many pigeons and other wild birds that frequent the Gardens and among which the Budgerigars were often picking about on the lawns. This was particularly disappointing, for the colony had been a thriving one and when I last saw them at the beginning of July many of them were flying out and making a fine show. When the boxes were inspected in June there were thirty young ones nearly ready to come out, and at the time of the destruction of the flock a further twenty-six young were in the nests.

Another serious loss was that of the Mantell's Kiwi from pericarditis after only two years in the Gardens.

The young Amazon Parrot from Central America presented some time ago by Mr. Chippendale is now identified as a White-browed or Spectacled Amazon (*Amazona albifrons*).

Birds brought from British Guiana :—

*1 Black-throated Cardinal (*Coccopsis gularis*). 5 Yellow-winged Sugar-birds (*Cyanerpes cyaneus*). 1 Purple Sugar-bird (*Cyanerpes caeruleus*). 1 Black-headed Sugar-bird (*Chlorophanes spiza*). *1 Red-fronted Woodpecker (*Melanerpes rubrifrons*). *3 Cayenne Jays (*Cyanocorax cayanus*). 2 Great Green Caciques (*Ostinops viridis*). 4 Glossy Cowbirds (*Molothrus bonariensis minimus*). 1 Yellow-headed Marsh

Bird (*Agelaius icterocephalus*). 3 Cayenne Red-breasted Marsh Birds (*Leistes militaris*). 2 Yellow-crowned Troupials (*Icterus chrysocephalus*). 3 Golden Hang-nests (*Icterus xanthornus*). 2 Yellow-backed Hang-nests (*Icterus croconotus*). 1 Swainson's Grackle (*Holoquiscalus lugubris*). 4 Lesser Rufous-headed Tanagers (*Tangara cayana*). 4 Blue Tanagers (*Thraupis episcopus*). 2 Palm Tanagers (*Thraupis palmarum*). 1 Magpie Tanager (*Cissopis leveriana*). 1 Lavender-backed Finch (*Sporophila castaneiventris*). 5 Fire-red Finches (*Sporophila minuta*). 5 Lined Finches (*Sporophila lineola*). 2 Pileated Song Sparrows (*Zonotrichia capensis*). 1 Graceful Mocking Bird (*Mimus gilvus*). *1 Black-capped Mocking Thrush (*Donacobius atricapillus*). 1 Cock-of-the-Rock (*Rupicola rupicola*). 2 Red-billed Toucans (*Ramphastos monilis*). *1 Roraima Emerald Humming Bird (*Chlorostilbon prasinus subfurcatus*). 3 Lesson's Emerald Humming Birds (*Amazilia fimbriata*). 1 White-bellied Emerald Humming Bird (*Amazilia leucogaster*). 3 Blue and Yellow Macaws (*Ara ararauna*). 1 Scarlet Macaw (*Ara macao*). 2 Red-bellied Macaws (*Ara manilata*). 3 Green-winged Macaws (*Ara chloroptera*). 1 Hahn's Macaw (*Diopsittaca hahni*). 1 Yellow Conure (*Eupsittula solstitialis*). 7 Brown-throated Conures (*Eupsittula pertinax aeruginosus*). 9 Blue-winged Parrotlets (*Forpus passerina*). 3 Mealy Parrots (*Amazona farinosa*). 2 Red-vented Parrots (*Pionus menstruus*). 1 Hawk-headed Parrot (*Deroptyus accipitrinus*). 4 Black-headed Caiques (*Pionites melanocephala*). 2 Cayenne Owls (*Rhinoptynx clamator*). 1 Trinidad Pygmy Owl (*Glaucidium brasilianum phalaenoides*). *1 Short-winged Burrowing Owl (*Speotyto cunicularia brachyptera*). *2 Isabelline Kestrels (*Falco sparverius isabellinus*). 4 White-faced Tree Ducks (*Dendrocygna viduata*). 2 Grey-winged Trumpeters (*Psophia crepitans*). 1 Central American Thicknee (*Burhinus bistriatus*). 1 Rail *Sp. inc.* 1 Rufous Pigeon (*Columba rufina*). 10 Talpacoti Ground Doves (*Chaemepelia talpacoti*). 1 Red Ground Dove (*Oreopeleia montana*). 3 Crested Curassows (*Crax alector*). 1 Grant's Guan (*Penelope granti*).

* New to the Collection.

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COUNCIL MEETING

A Council Meeting was held on 14th September, 1955, in the Council Room, Zoological Society of London.

There was the following appointment :—

Elected President : Mr. D. Seth-Smith.

ARTHUR A. PRESTWICH,
Hon. Secretary.

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BRITISH AVICULTURISTS' CLUB

The forty-eighth meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, S.W. 7, on Wednesday, 14th September, 1955, following a dinner at 7 p.m.

Chairman : Miss P. Barclay-Smith.

Members of the Club : Mrs. J. R. Alderson, P. C. Bath, Hylton Blythe, Miss K. Bonner, W. Brain, Captain A. A. Clarence, W. D. Cummings, A. H. D'Aeth, W. T. Dring, Mrs. W. T. Dring, B. H. Dulanty, Squadron-Leader C. Everitt, Mrs. C. Everitt, Miss S. A. Fothergill, Miss D. Gask, H. J. Harman, M. Scott Henderson, Dr. E. Hindle, Miss S. I. Hobday, G. T. Iles, Terry Jones, Miss E. M. Knobel, Miss M. H. Knobel-Harman, Mrs. E. M. Lonsdale, F. Mosford, G. S. Mottershead, S. Murray, A. A. Prestwich, R. C. J. Sawyer, D. Seth-Smith, P. Sutton, E. N. T. Vane, N. S. Walker, C. H. Wastell, Mrs. G. Wheatley, S. A. Wright, J. J. Yealland.

Guests : Dr. K. W. Aylwin-Gibson, J. Bailey, R. Barclay-Smith, S. A. Croucher, Mrs. S. A. Croucher, Miss H. Gentry, S. Hughes, Miss D. G. Lonsdale, Mrs. S. Murray, Dr. F. H. Rayward, Mrs. D. Richardson, G. Sutton, Miss G. Sutton, Mrs. P. Sutton, Mrs. C. H. Wastell, Miss H. Wastell, W. A. Wood, A. J. Woods, Mrs. S. A. Wright.

Members of the Club, 38 ; guests, 19 ; total, 57.

Before dinner, at the request of the Chairman, members and guests stood in silence for a few moments as a tribute to the memory of the Club's Patron, Mr. Alfred Ezra.

After the Loyal Toast the Chairman said she had very great pleasure in announcing that at the Council Meeting in the afternoon Mr. David Seth-Smith had been elected President of the Avicultural Society. The new President's health, coupled with that of Mrs. Seth-Smith, was then duly drunk with acclamation. Mr. Seth-Smith in his reply said he felt greatly honoured to be elected to follow such great former Presidents at Canon Dutton (Lord Sherborne), Mr. H. D. Astley, and, of course, Mr. Ezra, who had been President for twenty-nine years.

The Chairman then welcomed Dr. F. H. Rayward, who was due to return to Sydney the following morning. Unfortunately, owing to indisposition Mrs. Rayward was unable to be present. Dr. Rayward brought messages of greeting and good-will from aviculturists in Australia which on our part are heartily reciprocated.

Mr. Gerald Iles then showed a selection of his coloured films—the Avicultural Society's visit to Clères, 1950 ; the Meeting of the International Union of Directors of Zoological Gardens, at the Antwerp Zoo, 1953 ; the Avicultural Society's visit to the Antwerp and Rotterdam Zoos, 1955, and the ever popular " Fine Feathers ".

At the conclusion the audience showed by its applause that it had thoroughly enjoyed and fully appreciated Mr. Iles's efforts to entertain and amuse it.

The next meeting of the Club is on **9th November, 1955.**

ARTHUR A. PRESTWICH,
Hon. Secretary.

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NEWS AND VIEWS

The Ministry of Works has appointed H. A. Fooks as Bird-keeper of the Central Royal Parks, London.

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Dr. E. M. Lang, Director, Basel Zoo, reports that their Tasmanian Waterhens (*Tribonyx mortieri*) have hatched and reared a nest of six young ones. This is probably a " first " for Europe.

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E. N. T. Vane has bred a lutino Nyasa Lovebird, from birds originally in the late Duke of Bedford's collection. This is the first time this has been accomplished in this country.

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The Whooping Crane.—Last winter only twenty-one Whooping Cranes reached their Texas refuge and there were no young birds. This year at a secret location in Buffalo Park three pairs of adults have been found and they are rearing four young birds.

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Dr. C. Purkyne, Director, Prague Zoo, writes : " In 1953–54 we imported direct from China nine Derbyan Parrakeets, six males and three females. One male was sent to Whipsnade in 1954, the remainder are still in our Garden and thriving. Two hens have laid eggs ; one has hatched two young."

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G. A. Coleman reports one young Lazuli Bunting flying, twenty-five days old on 1st August, and the hen sitting on a further clutch of three eggs. This is probably a first success, but unfortunately Coleman is not a member of the Society so he is, of course, ineligible for the Society's Medal.

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A further report from C. af Enehjelm says : Lesser Rock Sparrow, three further young have left the nest. Black-crested Finch, one young one reared ; the male parent was one bred in 1953. Little

Owl, all five young thriving. Wood Pigeon, again have two young in the nest. Humboldt's Penguin, two young doing well.

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A brood of four Layard's Parrakeets has been reared at Keston. This species has only been previously bred by Mrs. Iris Darnton, 1935, two reared ; the late Duke of Bedford, 1935–38, with varying success ; and at Leckford, 1939, three reared.

Other rare parrakeets bred at Keston this season include Splendid Grass Parrakeets, Pileated, numerous Turquoisines and, of course, blue Ringnecks.

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Breeding reports.—G. C. Lynch, 3 Rock Pebblers : C. M. Payne, 3 Derbyans, 3 Rock Pebblers, 2 Pennant's, 2 Princess of Wales's, and 1 Mealy Rosella : D. F. Castle, 3 Guiana Parrotlets, one male and two females : T. McCleary, Ayr, 2 Splendids—a " first " for Scotland : G. A. Gjessing, Norway, 7 Bourkes : P. C. Bath, 2 young Blue and Yellow Macaws in the nest : S. B. Kendall, two Citron-crested Cockatoos out of the nest, Dwarf Cockatoos hatched, one Plum-headed Parrakeet reared.

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Round the Zoos.—Belle Vue (Manchester)—arrivals, 8 Egyptian Flamingos.

Whipsnade—4 Barraband's Parrakeets reared.

Wassenaar—arrivals, 2 Australian Tawny Frogmouths. Apart from four at Regent's Park they are probably the only examples in Europe.

Basel—5 Storks hatched.

Milan—4 Black Swans hatched.

Naples—arrivals, 1 Queen of Bavaria's Conure, 4 Cassowaries, and 2 Cock-of-the-Rock.

Brookfield, Chicago—arrivals, pairs of Quetzal, Helmeted Guinea Fowl and Andean Goose.

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M. Willy Friling celebrated his eightieth birthday on 4th August, 1955, and a telegram of congratulations was sent by the Council of the Avicultural Society. In acknowledgment M. Friling wrote : " I was deeply touched and thank you very much for the kind wishes expressed. Let me tell you once again how much pleasure the recent visit of the Society gave me, and may I hope that as many members as possible will come again next year, in which event I will do my best to provide better weather."

A. A. P.

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CORRESPONDENCE

ANTING-LIKE BEHAVIOUR IN PSITTACINES

Mr. Derek Goodwin has in great detail described the processes of " anting " in passerine birds. If the term " anting-like behaviour " could be used to describe the application to the plumage of a bird of some irritant or volatile substance for parasiticidal or stimulating purposes I would like to report on a definite process of this nature observed in parrakeets.

A definite behaviour pattern has been observed here in three species of parrakeets but I have reason to believe that most if not all of the Australian parrakeets will follow the same routine.

The substance used was the volatile Eucalyptus oil which is very abundant in the young suckers of the White Gum (*Eucalyptus redunca*). Young suckers of this species of gum were hung in the aviaries and the following behaviour, identical in every respect, was observed in both members of pairs of the following species—Pennant's Parrakeets, Blue Mountain Lorikeets, and Red-collared Lorikeets.

Oil was extracted by mascerating the bark in the region of the leaf nodes. The leaves were not bitten off as is usually the case. After chewing the bark, the sides of the beak were rubbed on to the place until presumably some oil became adherent. From here on the behaviour was completely stereotyped.

The oil was first applied to the preening gland with a circular motion of the beak. The feathers were then fully erected and the tail feathers preened. This was followed by preening movements to the following parts in exactly this order—breast, then thighs and abdomen, under-surface of wings, back and mantle, then wing-coverts and flight feathers. The process was repeated several times, always in this order. The feathers were fully erected throughout and the oil was usually applied first to the preening gland, but on occasion directly to the part in question. The whole procedure was carried on for from 15 to 20 minutes and was followed by several stretching movements.

Apparently the Eucalyptus oil requires dilution with the normal oily preening secretion, but the purpose of the full erection of the feathers could only be surmised as to allow the oil to come in direct contact with the skin.

PHILIP M. A. HARWOOD.

GLEBE ROAD,
DARLINGTON,
WESTERN AUSTRALIA.

MARKED WHITE ZEBRA FINCHES

I am very sorry Mr. Boosey has taken exception to my letter regarding Marked White Zebras. I intended to be informative rather than critical.

It was an error on my part in referring to his birds as being of " very poor quality " and I hasten to apologize for this. What I intended to say was that they must be " poorly marked " as nobody could ever dream of calling them " Chestnut Flanked Whites " if they saw a really good specimen.

Whilst on the subject of names I beg leave to ask by what right or rule does Mr. Boosey assume the authority to name these or any other birds for that matter? These particular birds were originated and named in Australia and I feel sure all fair minded fanciers will agree that this privilege should be ours.

It is of course quite possible Mr. Boosey's birds may be related to mine, but after fifteen years I would say the relationship may be somewhat in the nature of our relationship to Adam or Eve.

There is no need for further correspondence on this matter. I understand that some really good specimens of the above variety have recently been sent to England and Mr. Boosey is bound to see some of them.

N. V. WHITEHOUSE.

183–5 GEORGE STREET,
BRISBANE, AUSTRALIA.

BLUE RING-NECKED PARRAKEETS

I was very pleased to read in the current number of the AVICULTURAL MAGAZINE that both Mrs. Clark and Mr. Vane have bred three young blue Ringnecks this season and I think that—including our four—a total of ten of these beautiful parrakeets reared in this country this season can be regarded as very satisfactory.

I was interested also to read that Mr. David West has bred two in America and wonder if any were bred by other American aviculturists, or whether Mr. West's two represents the total number reared in the U.S.A. this season. It would also be of interest to know whether any blue-bred young have been reared there during 1955 and how many blues there are at the present time in American aviaries.

Actually American aviculturists were in the favoured position of being able to make an earlier start with this mutation than were their counterparts in this country, as the late Duke of Bedford—possibly because he thought their climate better—invariably sold to America any blue Ringnecks that he had for disposal.

EDWARD J. BOOSEY.

BRAMBLETYE,
KESTON, KENT.

CAIQUES

I was very interested to read the article on Caiques in the current number of the AVICULTURAL MAGAZINE, because my aunt, the late Mrs. Haynes, of Camberley, had a *Pionites melanocephala* for many years. I cannot, I am afraid, now recall the exact colouring of the under parts and therefore to which race it belonged. She brought it over from Barbados about 1920 and had it for at least fifteen years.

What, however, has prompted me to write is that I well remember its antipathy to me as a child, which you quote as characteristic of the Pallid Caique. On one occasion when I was about 10 and approached my aunt, it leant forward from her shoulder where it customarily perched and bit me just under the eye, and many other times it came down from its perch just as Stolzmann described and chased me round the room! Later, when I grew up, it preserved a sort of neutrality, and I must say that I for my part was careful to keep well away from it.

It was of course devoted to my aunt and took seeds from her mouth. Incidentally, she called it a Seven-coloured Caique.

BRUCE CAMPBELL,
Secretary, British Trust for Ornithology.

2 KING EDWARD STREET,
OXFORD.

LESSER ROCK-SPARROW

I have read with interest the announcement of the breeding of *Petronia dentata* by Mr. C. af Enehjelm, of Helsingfors.

It may interest you that the same species has been previously bred in the former Rijswijk (Holland) aviaries of Mr. P. W. Louwman, owner of the Wassenaar Zoo. The writer, who at that time personally took care for these birds, has looked up the record, which says:

"Mid-May, 1933, the parent birds built a nest in a small nesting block high under the roof of the garden aviary at Rijswijk.

"So shy were the parent birds that it was some time before we were able to identify the species of the breeding birds, which shared a large aviary with many other small birds.

"On inspection on 7th June, 1933, three half-feathered birds were found in the nest. One was thrown out of the nest on 9th June.

"The other two left the nest on 12th June and lived to maturity."

W. W. DIEDRICH.

DIERENPARK WASSENAAR,
HOLLAND.

* * *

CANDIDATES FOR ELECTION

L. C. Anderson, 71 Upney Lane, Barking, Essex. Proposed by H. J. Darman.

J. M. Colquhoun, Ardmore, Papakura, R.D., New Zealand. Proposed by W. G. Baird.

Louis Dierckxsens, President, Société Royale de Zoologie d'Anvers, 26 Place Reine Astrid, Antwerp, Belgium. Proposed by Miss P. Barclay-Smith.

A. Diggle, 10 Cross Hill Street, Highcrompton, Shaw, nr. Oldham, Lancs. Proposed by A. A. Prestwich.

Professor William C. Dilger, Department of Biology, St. Lawrence University, Canton, New York, U.S.A. Proposed by A. A. Prestwich.

H. L. Driver, 64 Laburnum Road, Biggleswade, Beds. Proposed by W. B. Frostick.

C. Ellis, Corsham Court, Corsham, Wilts. Proposed by D. M. Coward.

A. Fairbarns, The Round Hill, South Benfleet, Essex. Proposed by Miss K. Bonner.

G. St. George Schombero, 102 Drayton Gardens, London, S.W. 10. Proposed by A. A. Prestwich.

J. Shynal, 48 Holly Avenue, Hamilton, Ontario, Canada. Proposed by P. Orsatti.

R. G. Smith, 247 Gladstone Avenue, Wood Green, N. 22. Proposed by Miss K. Bonner.

P. Van Gijsegem, O.L. Vrouwlaan 108, Evere, Belgium. Proposed by P. L. Raymackers.

Miss A. Walker, Bluegum Road, Paraparaumu Bch., New Zealand. Proposed by Rowland Hutchinson.

NEW MEMBERS

The eight Candidates for Election in the July-August, 1955, number of the Avicultural Magazine, were duly elected members of the Society.

CHANGES OF ADDRESS

E. H. Bailey, to Green Gables, Castletroy, Limerick, Eire.

W. D. Bell, to Sloelands Farm, Chesham, Bucks.

T. R. W. Crewes, to Silverdale Cottage, Queensthorpe Road, Sydenham, S.E. 26.

Miss E. K. Lemon, to c/o 1007 Government Street, Victoria, B.C., Canada.

H. C. Stephan, to "Hathersage", Gordons Road, Somerset West, C.P., South Africa.

J. H. Walmsley, to P.O. Box 1368, Port Elizabeth, Cape Province, South Africa.

DONATIONS

(Coloured Plate Fund)

	£	s.	d.
Peter Scott . . .	5	0	0
Mrs. H. L. Schumacher . .		15	0
Major J. Findlay . . .		10	0

MEMBERS' ADVERTISEMENTS

The charge for Members' advertisements is ONE PENNY PER WORD. *Payment must accompany the advertisement, which must be sent on or before the 15th of the month to* A. A. PRESTWICH, 61 CHASE ROAD, OAKWOOD, N. 14. *All members of the Society are entitled to use this column, but the Council reserves the right to refuse any advertisements they consider unsuitable.*

FOR SALE

One adult breeding pair Ringnecks; one adult cock Ringneck; 1955 Redrump, Cockatiels, Masked and Fischer's Lovebirds. All from outdoor aviaries.—KENNETH GREENWAY, Park Lane, Long Handborough, Oxford.

Australian Bronze-winged Pigeons, £6 6s. pair; Moustache Parrakeets, £17 10s. pair; Abyssinian Lovebird, cock, £7 10s.—A. A. PRESTWICH, 61 Chase Road, Oakwood, N. 14.

WANTED

Hens—Barraband's, Peach-faced Lovebird, White-eared and Brown-eared Conures.—Major V. DILWYN JONES, Sherwood, Grosvenor Road, Llandrindod Wells, Radnor.

AUSTRALIAN PARROTS IN CAPTIVITY

A series of articles by Alan Lendon published in the Avicultural Magazine. A full account of 60 species of Australian Parrots is included in the book which deals where possible with the author's personal experiences in keeping them in captivity in South Australia.

There are one coloured and seven photographic plates. Stiff paper cover. Price 7s. 10d., post free. Published by the Avicultural Society, and obtainable from the Hon. Secretary, 61 Chase Road, Oakwood, London, N. 14.

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